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"THE TOPOGRAPHY OF IGNORANCE"—THE CANCER PROBLEM.¹

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To know one's ignorance is the best part of knowledge.

—Lao-Tsze: "The Simple Way."

CEREMONIAL ADDRESSES, especially on occasions such as these, are nowadays so numerous that they inevitably become, if not stereotyped, at least traditionally standardized. Within a general framework there are several patterns. Thus the principal theme may be an exhortation on some shortcomings, academic or practical, of the members of the group (and of others whose activities impinge on it), a description of the events of the past, a review of the state of the subject at present or prophecies as to the future. Sometimes considerations of economics or ethics decide the topic. Today I propose to discuss in particular the present state of that part of the subject which is rapidly achieving an increasing degree of relative importance; this is cancer research.

¹ Presidential address, delivered at a meeting of the Section of Pathology, Bacteriology, Biochemistry and Forensic Medicine, Australasian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

As with all other subjects, as the result of modern overspecialization, pathology is in some danger of being divided into many small segregated subdivisions; but this is one place, even if it was not true of others, where we cannot afford to know "more and more about less and less". It may not be practicable to be even moderately conversant with the details of every part of the subject, but it is essential that we have some knowledge of the general principles governing the whole subject and the integration of the different parts. That "all are but parts of one stupendous whole" is especially true here, and indeed I, for one, would wholeheartedly agree with that rogue Pistol—"Why, then the world's mine oyster".

The various parts of pathology are separated from each other partly by the time of their emergence and, arising from this, partly by prejudice. It is necessary, from the very nature of things, that we should have some idea of the structure of any object before we can seriously consider its function and the mechanism of its functional components. It was an interesting (and perhaps inevitable) stage of development which should have attempted to relegate the study of structure to the limbo, presumably to emphasize the importance of other aspects of biological inquiry.

Though eulogies are superfluous, it is of interest that the first scientific studies of the Renaissance by post-mortem examination were made by a pathologist, as we would now term him, Benevieni in 1507, nearly half a century before the publications of Vesalius. Histo-

pathology, depending on developments in optics, did not emerge until about 1850. Study of function followed, and the work of such as Cohnheim and Rost provides shining examples of the place occupied by pathologists. Biochemistry, arising in the early part of this century, is becoming an increasingly important component of any investigation.

It is important here, in my view, to distinguish between the two terms that have been employed—chemical pathology and medical biochemistry. The former term should be used only when we are dealing with the problem from the point of view of pathology, and not merely as a technical adjunct of medical investigation.

Associated with these chemical advances of the last few years, we have the corresponding achievements in ultra-microscopic physics. The development of the electron microscope in its present form is a production of the last decade, and is already playing a tremendous part in our investigations on the nature of cells at a completely new level.

Many biochemical and biophysical techniques have been elaborated in the last few years, and though this is no place to discuss details, any account of modern investigations should include mention of ultracentrifugation, electrophoresis, counter-current distribution, chromatography, spectrography, spectrophotometry (ultra-violet and infra-red) and histospectrophotometry. Various subdivisions of these, to say nothing of X-ray diffraction and others, all play their part in our attempts to define more clearly the extent of our ignorance. The more we investigate these subjects, particularly with modern techniques, the more it becomes abundantly clear that "We don't know one millionth of one per cent of anything".

There is one further point that I should like to make here. The scientific investigator derives great pleasure from the work that he does and from the experience that he gains; but there are those who do not appreciate that they have a responsibility, not only to themselves, but also to the community which provides the facilities for their work. This responsibility means the passing on of any knowledge that they may have acquired; after all, they were able to do their work only because of information that had been conveyed to them from others. Indeed, I would think that there is only one form of labour which the average man shuns more instinctively and more consistently than the effort of thinking and of original observation; this is the task of carefully recording his observations and thoughts. Bacon has said: "Reading maketh a Full Man; Conference a Ready Man; and Writing an Exact Man." Thus, for more than one reason, the most valuable part of an investigation is an accurate record of its findings.

All that has been said applies generally to cancer research. I propose now to mention briefly some of our own recent contributions. Of necessity, only a very small part of the field has been studied, but it has been a matter of interest to me personally to note how necessary it is to have some knowledge, even though limited, of adjacent fields and of many modern techniques.

Study of cancer has proceeded along the same lines as general pathological work. At first, it was solely morphological in character. When the microscope came into general use, this was intensified; a colossal amount of information has been collected, and, it should be emphasized, observations of considerable value in this direction are still being made.

Towards the end of the last century studies comparable with those on the function of normal tissues were being instituted, and these have become the biological (and particularly the biochemical) investigations of recent times; these are having a great influence on modern thought. In the last few decades experimental work, including tissue culture studies, has begun to play an increasingly important role. Probably the greatest single contribution was the recognition, isolation and preparation in purified form of the chemical carcinogens. Their use in experimental studies has opened new fields which would otherwise have remained not only unexplored but unknown.

It should be mentioned that the relation of the chemical materials to cancer was observed by Percival Pott in 1785. Naturally, he had no inkling of the nature of the material in soot which was responsible for the development of the tumours; but there can be no doubt that his observation and almost supernatural intuition or insight (in view of the long latent period separating the young boy and the chimney soot from the occurrence of the growth in the old man) were responsible for our knowledge of one group of carcinogens. Later scattered observations over the subsequent years culminated in the production of the purified condensed cyclic hydrocarbons at the end of the third decade of this century. This has opened up a vista, the magnificence and certainly the magnitude of which are indicated, in some degree, by the tremendous literature which has arisen directly out of our knowledge of these materials in pure form.

A point deserving emphasis here is that, as happened with the advent of physiological inquiry in other fields, the introduction of these methods of investigation has relegated the study of morphology to a subordinate position. In one sense this is both proper and reasonable; but the tacit assumption that a knowledge of the structure of tumours, in some detail, is unnecessary for the proper appreciation of results obtained in practically every branch of biological research into cancer is what Toynbee has described as a "mental and moral aberration". Not only is it apparent from one's own experience, but it can be observed even in recent literature that serious errors in interpretation arise from lack of a clear appreciation of the nature of experimentally produced conditions of near-neoplastic character. To take an example: a complex biochemical study of some or other features of cell groups is of doubtful value if the nature of these cells is not known.

Various stages of development of tumours, resulting from the action of various carcinogens, have been studied. Some of these tumours are peculiar to certain species, and some are found only in certain organs, so that a great deal of study is here required.

Whether condensed polycyclic hydrocarbons or diazo dyes are used, the carcinogen becomes concentrated in the cells of the organ in which the tumour is to develop. Its inter-reaction with some part of the cytoplasm is an essential part of the phenomenon, and the conjugation of the carcinogen with the cellular component appears to determine whether and where a tumour will arise. One of the diazo dyes (butter yellow) has been specially studied, and it is of great value in experimental research because it produces characteristic and consistent changes in the liver—

... and so do his sisters and his cousins and his aunts!

His sisters and his cousins,

Whom he reckons up by dozens . . .

That is to say, these phenomena have been observed with a large series of related substances.

Experimental work has covered a wide range of animals and of techniques. The effects of many chemical carcinogens, various physical agents ranging from mechanical forces up to gamma radiation and numerous viral agents have been studied. A very large number, which is almost daily increasing, of chemical carcinogens have been investigated in various ways, in various degrees of purification and in various concentrations.

Variety's the very spice of life,

That gives it all its flavour.

Here, the effects of the substances not only by themselves, usually in concentrated form, but also in combination with various other materials, have been studied. Some of these enhance the action of the chemical carcinogen, whereas others inhibit it, and these are referred to respectively as co-carcinogens and anti-carcinogens. It is of special interest that some of the carcinogens themselves may be, in fact, anti-carcinogenic to others. This is an extremely important factor to be considered when conclusions are being drawn on the action of materials which are not in pure form; for example, at least two of the carcinogens which may be obtained from tobacco smoke are mutually antagonistic.

The chemical carcinogens have been used to produce a remarkable variety of tumours in different organs. They have been used not only to study the effect of the carcinogen itself, but also to allow observations of the early stages of the condition and of the pre-cancerous stages. Various methods of application have been employed: painting of solutions or suspensions of carcinogens on superficial tissue such as the skin; feeding the material in various diets (often modified by removal of vitamins); injection of the carcinogen into various parts of the body; or the implantation of pellets, in which the carcinogen is mixed with material which will slow down the rate of absorption of the material. There is always a considerable latent period between the time of the first administration of the carcinogen and the development of the tumour, and this varies considerably in different animals. In general, it may be said that when a carcinogen does affect different species, the larger the animal, the longer will be the latent period. Tumours are produced with greatest ease and certainty in the skin; but they have been produced in certain other areas, and special studies have been made of bone tumours in rabbits. Incidentally, most difficulty has been met in producing carcinoma of the bowel, possibly because the carcinogen does not remain in one place sufficiently long to provide the consistent effect or stimulus which is necessary for the production of malignant tumours.

As has been mentioned, there are considerable differences in the effects produced in different species, and it is important that various species should be examined since the comparison of the different results may allow some indication of the probable effect of these carcinogens in man. One of the serious defects of the conclusions drawn from modern cancer research is that there has been a too easy transposition of the results obtained in some of the lower animals to higher animals including man; usually such conclusions are unjustified.

A study of these tumours, which can be produced almost at will, allows scrutiny not only of the early stages of the growth itself, which are often found only by accident in man, but also of accidents such as metastases, and of the nature and method of control of tumours by hormones and other agents. The effect which is produced is often very different from what is expected. Recently a study was made of the effect of the administration of amino-acetonitrile, which produces considerable change in connective tissue, on some tumours of the rat. It was thought that the change in (inhibition of) the connective tissue might allow the tumour cells to grow more rapidly and spread more easily; but, in fact, it was found that the tumours grew much more slowly than the controls, probably because of some unexpected direct or indirect effect of the material on the tumour itself.

A considerable number of tumours will grow after transplantation into animals of the same strain, and several of these have been studied. It is important here to remember that these present a completely different problem from the naturally occurring tumours. The growths must have special characteristics to allow of their development in an alien body, and any conclusions which may be drawn, whether regarding the manner of growth or the nature of factors which may influence their rate or form of development, may not necessarily have any direct bearing on those relating to the naturally occurring tumours.

Experiments dealing with these problems, some of which are of considerable extent and variety, have been undertaken, and though they cover only a very small part of the possible investigations in experimental work, they indicate the very great possibilities of this type of investigation in the next few years.

One question, of fundamental significance, is the mode of action of the chemical carcinogens. For some considerable time it has been known that they produce their effect by causing damage to cells and, in the first place, inhibiting their growth. More precise information, such as that already discussed, has been appreciated only recently. The carcinogen becomes concentrated in the tissue on which it acts, and actually within the cells of

the tissue. It becomes attached, in some way, to some part of the cell, and this has been shown, in the case of the liver, to be a protein or protein complex in the cytoplasm. At an earlier stage it was thought that the lipids of the protoplasm were important, and in view of the complex inter-relations of fats and proteins in living cells, the unravelling of this question may still show that they play some part. The difficulties are shown by the observation that, as happens in many other examples of studies of protein colloids, very different results are obtained with slight changes in chemical technique; the problem is thus to determine what is actually happening in the living state, this being easily and often irrevocably changed by alterations in temperature, pH and the presence of other chemical substances. Indeed, "This is a puzzling world, and Old Harry's got a finger in it".

The elucidation of the site of activity in the molecule of the carcinogen has been approached from aspects as far apart as comparative morphology, chemical pathology and theoretical physics. One method of investigating this is to determine the degree of carcinogenic activity (by experimental trial) of different compounds having the same basic chemical structure. In so far as the materials produce their effect by union with cytoplasmic components, the study of similar compounds shows which part of the molecule becomes attached to the tissue and, therefore, the region in the molecule which is presumably active. It would be inappropriate to discuss this in detail here; moreover, the problems of the significance and the activity of the "K" region of the polycyclic hydrocarbons and diazo dyes have been and are being discussed widely in the literature.

From the present point of view, the important feature is that numerous compounds are required for study. These are often new and therefore not available commercially. Chemical firms are naturally loath to synthesize them, and, in any case, their cost is prohibitive. The production of such material thus becomes an essential subsidiary research; it should be said that regarding this as subsidiary to the main biological problem (it is only a small part of it) does not imply that it is not important and often technically difficult. Recently, for one relatively small study, it was necessary to synthesize in my department 11 compounds (of the diazo dye type) which were not available or procurable from external sources. This emphasizes the point of view expressed earlier, that knowledge of many techniques is essential for the adequate conduct of modern cancer research.

A great deal of investigation has already been carried out here. The phenomenon has been studied in various tissues, but most work has been carried out on the liver of the rat after feeding with 4-dimethylaminoazobenzene (butter yellow); probably this is because the liver, on account of its homogeneity of structure, is technically a much simpler organ to deal with than those in which there is a mixture of structures or in which the tissues have different physical character.

Electrophoresis and high-speed centrifugation studies of homogenates of the liver tissue of rats show that the dye has become attached to a component of the soluble cytoplasmic proteins. Two problems arise immediately: First, what particular protein or proteins are affected? And secondly, which part of the protein is particularly involved in this chemical or physico-chemical interaction? This question is being investigated by P. Hughes, using several techniques. After separation of the affected cytoplasmic component, a tryptic digest is prepared and a partially digested mixture is then being investigated. This is done partly by complex paper chromatography and partly by counter-current distribution. The matter is being studied in some detail; but for the moment it suffices to say that amongst the various constituent peptides which are derived from these digests, a characteristic component attached to dye is being consistently recovered. This is being studied in detail. Attempts to determine its component amino acids, and especially those to which the dye becomes attached, are being made. Furthermore, a further technique, using amino acids labelled with the appropriate isotopes, is being employed. The details of

the experiments and the results obtained will be recorded in due course.

Ever since their introduction as an experimental method, serological studies have been applied to the investigation of tumours. When the first difficulties in the production of antibodies to tissues were overcome, it was thought that it should be possible to produce specific antibodies to tumours which could be used therapeutically. This was derived from the view, which had been held in one form or another, that neoplasms were something different from normal tissues. This is still maintained in modern times in the inclusion, in definitions of neoplasms, of the idea that they are autonomous. Indeed, there are the two points of view, often hotly debated, that this is or is not true. The accumulation of information, especially that relating to the influence of hormones on tumour growth, has indicated that, though there are significant differences between normal and neoplastic tissues, nevertheless there are remarkable similarities.

Serological studies have emphasized the essential similarity of these tissues; an antibody to a tumour will also be an antibody to the normal cell corresponding to it. Despite these setbacks, the possibility, if not probability, of the demonstration of some recognizable difference has been repeatedly studied. Furthermore, the serological approach has been employed in the development of hypotheses concerning the mode of development of the cancer cell.

The loss of the protein or protein complex which becomes conjugated with the carcinogen has been "explained" on the basis of its becoming a "non-self" unit. The change in a protein which, by union with some extraneous material—even an atom of, say, a heavy metal—becomes foreign and therefore antigenic, is well known. In this way homologous antibodies are formed, and indeed the phenomenon is now recognized as being probably the basis of many pathological conditions. It is assumed that the reticulo-endothelial system reacts to the presence of the now "foreign" material, and that antibodies neutralize the complex, the result being its removal. In this way Green explains the occurrence of a cell race lacking the protein involved. However,

Things are seldom what they seem
Skim milk masquerades as cream.*

Attempts to demonstrate the formation of antibodies to the protein-carcinogen complex have been unsuccessful. Modern techniques are able to show the presence of antibodies when older methods could not, and this question is still being studied; but, to date, no confirmation of this view has been obtained.

The application of the hypothesis of the loss or deletion of some protein complex from tumour cells to the histological investigation of many tumours, independently of its literal truth or exactness, has proved a remarkably fruitful field to study. This, in itself, in some measure suggests that it is related to the truth. The first observations were made on rat liver and hepatoma (after butter yellow administration), with the use of serum globulin from rabbits which had been previously injected with rat-liver homogenate. The globulin, rendered visible (in ultra-violet light) by its conjugation with a fluorescein isocyanate, was used as a stain, and it was found that liver cells stained, whereas hepatoma cells did not. It was found that a similar result could be obtained by the use of globulin of rabbits which had not been previously injected.

This was then applied to naturally occurring tumours, both in animals and in man. In each case it was found that the normal epithelium of all organs stained well, but in no case did the tumour cells stain. This phenomenon has been investigated by C. Louis in a considerable number of tumours, and to date no exception has been found.

The next step was to investigate the globulins from a considerable number of species. These range from man through the carnivores and herbivores to the rodents, and even include the birds. In all cases the globulins have been effective as stains, and not only has this applied

to all the different globulins, but the globulins have shown similar characteristics when taken from the same species as the tissue or tumour. At present the alpha and beta globulins and albumins are also being studied, and the evidence already collected suggests that these are equally effective as stains.

It seems clear that the fundamental phenomenon here is an interaction between the proteins of the serum and certain proteins in the cell; these are absent from the malignant cell; "which is pretty, but I don't know what it means". This phenomenon has been discussed by P. Hughes and C. Louis, and does not require a special discussion here.

This phenomenon is clearly of general biological importance, and it seems likely that it will throw considerable light on certain aspects of chemical carcinogenesis. In addition to this possible long-range value, there is a certain short-term importance. The technique presents certain difficulties because of the necessity for keeping the tissues at a low temperature, not only up to the time of manipulation, but also during the stages of section cutting; the stain also is a complex one; furthermore, it is somewhat unstable. These difficulties, however, are no greater than many others which have been encountered in the histological study of tissues and, in due course, when the technique has been further simplified, the method, or some modification of it, will become routine procedure. The possible advantages of a histological technique by which it is possible to distinguish the innocent from the malignant cell in any section requires no special emphasis.

I have, at last, come to an end. It would have been inappropriate to attempt to deal with the problem in any comprehensive way; indeed, as I indicated at the beginning, this is a parochial account. A serious shortcoming is that it does not deal with Australian efforts, but merely with those of one department.

In extenuation of this attitude, it is submitted that there is an immense difference between things which we know, and those with which we are merely acquainted. The first we have acquired ourselves, the second we have been introduced to by others. "To spend too much time in studies is sloth", so that here it seemed better, in view of the colossal amount of information from which we might draw, to confine the review to first-hand material.

The subject is a vast one, appearing to have almost become coextensive with pathology itself. As an immediate problem it is becoming daily more prominent and urgent, as other conditions are losing their precedence under the onslaughts of new approaches of medicine, changed therapeutics (well seen in the antibiotics) and improved diagnosis.

In addition to this relative increase in cancer and the indubitable accession of cases from improved diagnosis, there seems clearly to be a true increase in the number of cases seen. "He that will not apply new remedies must expect new evils; for time is the greatest innovator."¹⁰ This is partly due to increased longevity of the population; there are, however, still some other factors, and thus, apart from the inherent challenge of the condition, cancer has become an increasingly urgent problem.

An important feature of modern research is that the most valuable contributions are of a basic character. The applied research with its apparent immediate practical value is evanescent in its importance and value; it is therefore interesting that so much effort, time and money should be expended in attempts to find "cures". A perusal of the literature of cancer research shows that here, as in other fields, the academic of today is the practical of tomorrow.

In order to carry out such research work adequately, two things are required: an adequate knowledge of the wide range of cancer, especially with regard to its fundamental morphology, and a comprehension of an extensive series of modern techniques. With these it is possible at least to delimit the extent of our ignorance. The progress that can be made in any one place seems pitifully small; but we can find some comfort from Macaulay that "knowledge advances by steps, and not by leaps".¹¹

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HYPNOSIS: AN EVALUATION OF ITS PLACE IN MEDICINE.¹

By AINSLIE MEARES,
Melbourne.

OVER the last decade, it would seem that there has been a very considerable revival of interest in hypnosis, among members of both the medical profession and the lay public at large. We hear of astonishing claims of successes, and on the other hand we hear of people who are sceptical or openly disbelieving. The purpose of this paper is to attempt some evaluation of the place of hypnosis in medicine in the light of our present knowledge of the subject.

I should have liked to approach the problem from the historical point of view, and I would have shown you how closely the use of hypnosis in medicine has been related to the culture of the times—how it has been related to the scientific and religious beliefs and to the general sophistication of the particular *milieu*. However, in a twenty-minute paper such an approach is not possible. We shall leave the names of Mesmer, Braid, Elliotson, Esdalle, Leibeault, Bernheim, Charcot, Janet and many others. We shall not discuss the strange facets of their personalities, which seem to have been closely related to their particular contribution to hypnosis. We must leave these matters and proceed straight to the discussion of the present-day situation.

Recently I have had the opportunity of discussing this matter with a number of leading psychiatrists in England and America. Some of their comments were pretty direct. One of these men told me: "Those who are working in hypnosis now are only rediscovering the things which were well known fifty or sixty years ago." This view was expressed with such authority and finality that I think it worth while digressing for a moment to explain why I think it is wrong. The older hypnotists used an authoritative approach, both in the induction of hypnosis and in the removal of symptoms by suggestion. The patient was overpowered by the prestige and authority of the therapist. This is very different from the methods of modern hypnoanalysis. The therapist is passive. The patient is shown how he can go into hypnosis of his own accord, and he is often allowed to retain control of the whole situation. Treatment by insight has largely replaced symptom removal by suggestion. Although there is still much to be learnt, we have made progress towards the understanding of the behaviour of the hypnotized patient in terms of psychodynamics. I think that the judgement of my authoritative colleague is at fault when he says that there is nothing new in the field of medical hypnosis.

I was also presented with another criticism, which I find much more difficult to answer. Expressed briefly, this view is that much of the work published on medical hypnosis is unreliable, and that many of those who practise hypnotherapy are themselves considered unreliable—some are persons who have very poor standing in the eyes of the rest of the profession. My own observations would lead me to believe that this view is at least partially correct. It has led to a number of reactions which have their effect on the rôle of hypnosis in medicine.

In the first place, it means that at present any work in hypnosis is suspect. It starts from behind scratch, as it were. This is easy enough to understand, and my own experience over the last decade would verify it. There are, however, other more complex reactions to this situation. A number of workers, aware that others in their field are regarded as suspect, have gone to the other extreme. There is an attempt to make everything as scientific as possible, if we use the term in its narrow and unenlightened sense. Clinical evaluation gives way to the laboratory approach. Nothing is published without exact standards, control series and statistical analyses. It was thought that this approach would do something to rehabilitate the status of hypnotherapy. In actual fact it has failed, as it has proved quite sterile. It is like the psychology student examining his own love relationship. The phenomena melt away. Is it that the phenomena never existed, or is it that they were not investigated by appropriate means? Although it is an heretic view to put forward, it would seem possible that some phenomena are not suited for investigation by the technique which is at present known as the scientific method.

This brings me to another point. I was recently talking to an English psychiatrist who has had considerable experience in hypnotherapy. The subject of conversation drifted on to parapsychology and extrasensory perception. He described some experiences with deeply hypnotized patients which were very suggestive of the operation of some mechanism of extrasensory perception. I asked him why he had not published his findings. He replied that he was frightened to publish them. People who work in such fields are considered queer and unreliable. If he made known his findings, he would lose his practice. So in the twentieth century, the stern hand of orthodoxy still stifles the expression of contentious ideas.

With this brief glimpse of the present-day background of the subject, we can proceed to discuss the more practical considerations of the place of hypnosis in medicine.

It would seem that the place of any form of treatment in medicine is mainly dependent upon four factors—its efficacy, its ease of administration, its dangers, and the availability of alternative forms of treatment. We will start by making an attempt to assess the dangers of treatment by hypnosis, as these are more difficult to evaluate than are the other factors.

In a general way, the dangers are proportional to the depth of hypnosis. For practical purposes, it is convenient to regard the waking state, the relaxed state, the hypnoidal state, light hypnosis and full hypnosis as a continuum of varying depth; so that dangers in relaxation are very small, while dangers in full hypnosis may be quite considerable. There are two complicating factors to this generalization. The first is that it is easy to hypnotize patients without any relaxation at all, and the second complication is that patients may make very rapid transitions from relaxation to deep hypnosis.

It is possible now to discuss only three specific dangers of hypnosis which seem to be particularly relevant to an evaluation of the place of hypnosis in medicine. These are perverse motivation, unfulfilled post-hypnotic suggestion and traumatic insight.

Perverse motivation may apply either to the patient or to the physician. A great number of patients come seeking relief of symptoms by hypnosis. However, on closer examination, it is found that the relief of symptoms is only a rationalization, and the patient is really seeking hypnosis for some perverse reason. It may be that a masochistic woman will seek treatment to fulfil her yearning to be overpowered in the surrender of hypnosis. The masculine-aggressive woman may ask for hypnosis for the opposite reason. She believes that she will not be hypnotized, and will so prove again that she is not to be overpowered by any man. The prepsychotic schizophrenic often seeks hypnosis on account of vague feelings of influence. Even more dangerous is the latent male homosexual who desires hypnosis so as to obtain a closer emotional relationship with the physician. I would stress just one point. These matters are not just interesting theoretical possibilities. They are the practical, everyday occurrences of medical hypnosis.

¹ Read at a meeting of the Section of Neurology, Neurosurgery and Psychiatry, Australasian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

Perverse motivation is by no means confined to the patient. The physician may be motivated to use hypnosis by unconscious drives of his own psyche. The hypnotic procedure may satisfy a sadistic need to be authoritative. It may fulfil a hysteroid need for display; or he may feel the intensity of the emotional relationship as frankly erotic. It would seem clear that no physician should hypnotize a patient without full consideration of his own and the patient's motivation.

Post-hypnotic suggestion is a powerful weapon for the removal of symptoms; but if the suggestion is not fulfilled, the patient may experience very acute anxiety. It is easy enough to make simple mistakes in phrasing the suggestions. As an example, a patient who has not been sleeping well may sleep deeply in hypnosis, and it would be easy to suggest to him: "You will sleep well at home tonight." It may just happen that he is down from the country, and is not going home that night. In these circumstances, the suggestion that he will sleep well at home may be sufficient to produce an anxiety state of some severity, because physical factors make it impossible for him to fulfil the suggestion. The effect is the same if the suggestion is not fulfilled on account of intrapsychic factors.

I well remember a man who was suffering from intractable insomnia. I taught him to put himself to sleep by auto-hypnosis in my consulting room. I then told him he would sleep at home without sedation; but he was unable to do so, and developed an acute anxiety state with generalized dermatitis.

I really believe that direct post-hypnotic suggestion should be used very cautiously. The method of non-specific post-hypnotic suggestion which is directed towards the patient's attitude, rather than towards his symptoms, is a useful technique, and does not carry the same danger of anxiety reactions.

The third important danger is traumatic insight. Hypnosis interferes with the function of the repressive mechanism. Under hypnosis, the patient will ventilate repressed material which he is unable to recall in the waking state. This, of course, is the basis of hypnoanalysis. It very often happens that a patient will spontaneously ventilate repressed material when he has been hypnotized for some other purpose. No harm will come of this, provided an adequate depth of hypnosis is maintained. But the ventilation of these ideas is often accompanied by the expression of very considerable emotion. This abreaction often reduces the depth of hypnosis. The repressed ideas surge into consciousness. The patient may become suddenly aware of forbidden love or hate, or his own homosexual tendencies. The shock may produce acute nervous illness. I have recently been treating a woman who was hypnotized in fun by a friend. In hypnosis, she had suddenly abreacted her sexual phantasy, and had developed a severe anxiety state. If this type of reaction is seen to be developing, it is easy for the physician to make the mistake of waking the patient in order to put a stop to it. This, of course, is the worst thing to do. The patient's safety lies in deeper hypnosis. He can then be put to sleep, and given suggestions of calm and of post-hypnotic amnesia.

Having briefly mentioned these dangers, we can proceed to discuss the actual use of hypnosis. In psychiatry, it is used for removal of symptoms which are maintained by habit or vicious circle mechanism, rather than by active conflict. Non-specific suggestion is used in relation to attitude, and in general support. Hypnoanalysis is used to shorten the time of insight therapy by the easier ventilation of repressed material. In these areas of psychiatry, it would seem that the validity of the role of hypnosis is beyond question.

However, in the field of general medicine, the situation is by no means so clear. Here hypnosis is most commonly used as an anesthetic agent. There is nothing new in this. There is the well-authenticated work of Esdaile in India, which includes accounts of over 300 major surgical procedures. Every now and then one still reads of reports of major surgery under hypnotic anaesthesia. However,

it would seem that the general effectiveness, safety and ease of administration of pharmacological anaesthesia far outweigh any advantage of hypnosis as an anesthetic agent. The rare exception would be in the case in which there was some clear contraindication for the usual methods.

In the case of dentistry, the situation is rather different. At present there is a spate of enthusiastic papers on hypnodontia, as it is called. Myself, I am rather at a loss to see the advantages claimed for it. To my mind, the fact that teeth can be extracted painlessly under hypnosis is not sufficient reason for the use of hypnosis in preference to effective local or general anaesthesia, which is more certain in its action and does not carry the same psychological hazards. If the dentist is adequately trained and experienced in psychodynamics to meet these situations, no harm will come of it. But it would seem that the average dentist is unlikely to recognize the prepsychotic schizophrenic or the latent homosexual, even if he does remain mindful of the dangers of hypnotizing such persons. It would seem wise for any dentist embarking on hypnodontia to examine carefully his own motivation.

Obstetrics is another field in which there is an increasing interest in hypnosis. Many of the criticisms of hypnodontia apply equally here. However, there are a number of different ways in which hypnosis is being used. In the ideal situation, the obstetrician himself is not only competent in inducing hypnosis, but is also experienced in the interpretation and management of hypnotic behaviour. He can then be assured of obtaining the full cooperation of the patient in the various stages of the delivery. In fact, I would regard this as a really ideal way for a woman to have her baby. However, these ideal conditions are not often fulfilled. In other cases, the patient attends a psychiatrist, who hypnotizes her and gives her post-hypnotic suggestions of painless delivery and full cooperation with the obstetrician. The obstetrician may feel that he is playing safe because he can fall back on an anaesthetic. This may serve the obstetric situation quite adequately; but it does nothing to allay the patient's disquiet of mind from an unfulfilled post-hypnotic suggestion.

As distinct from actual hypnosis, various relaxing techniques have come to be widely used in obstetrics. This is a step in the direction of hypnosis. From the practical point of view, the difference is that it is less effective, but it is much safer, and does not require any particular skill in psychodynamics to control it. The safety lies in the fact that suggestion given in the waking state does not have the same power as post-hypnotic suggestion, and when the suggestion cannot be fulfilled, it does not cause the same mental turmoil as an unfulfilled post-hypnotic suggestion.

In this respect, it would seem to me that the dentists could well profit by the experience of the obstetricians and develop relaxing techniques, rather than aim for the deep hypnosis of hypnodontia.

I believe that there is some revival of the use of hypnosis for symptom removal in general practice. As distinct from post-hypnotic suggestion, I would think that there must be great scope in general practice for the use of hypnoidal or just deeply relaxed states, both as a premedication for painful examinations or minor surgery, and as a means of tranquillizing patients with mild anxiety states. The difficulty, of course, is that such procedures take time.

The place of hypnosis in medicine will necessarily change as we develop greater understanding and better techniques. However, in our present state of knowledge, it would seem, on the one hand, that hypnosis is not sufficiently used in psychiatry, and on the other, that in general medicine there is some tendency to use hypnosis in circumstances which are potentially dangerous to the patient. At the same time, it would seem that there is plenty of scope for the greater use of relaxation and hypnoidal states, which are both simple to induce and safe for the patient.

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THE EFFECTS OF THYMECTOMY ON THE LYMPHOCYTE COUNT IN PATIENTS WITH MYASTHENIA GRAVIS.

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IN patients suffering from myasthenia gravis, striated muscle is characteristically infiltrated with lymphocytes, and the peripheral blood may show an absolute or relative lymphocytosis (Russell, 1953). There are, however, no reports of the changes in peripheral lymphocyte counts in myasthenic patients following successful treatment, either medical or surgical. The present paper reports the effects of thymectomy upon the peripheral lymphocyte level in 24 patients who underwent operation successfully, and discusses the prognostic and theoretical implications of these results.

Materials and Methods.

Observations have been made on 24 patients who underwent thymectomy at the Massachusetts General Hospital, on whose blood detailed white cell counts were performed before operation, and who were available for further lymphocyte counts at times ranging from one month to 15 years after thymectomy.

The 24 patients comprised three males and 21 females. Their ages at the time of operation ranged from six to 49 years, average 27 years. The indication for operation was myasthenia gravis in 21 cases, and the need for exploration of a mediastinal mass found during routine examination in the remaining three cases. One of these last three patients without myasthenic symptoms at the time of operation developed myasthenia gravis two months later. The 21 patients suffering from myasthenia gravis have been further divided into two groups—those who received X irradiation to the thymus prior to surgery (nine patients), and those who did not (12 patients). This is done because of the known extreme sensitivity of lymphatic tissue to X irradiation (Ross *et alii*, 1952; Yoffey and Courtice, 1956). The dose given was in most cases a tissue dose of 1500r spaced over one to two weeks. In all cases lymphocyte counts made within one month of thymectomy have been discarded, to eliminate acute effects of surgical trauma.

Lymphocyte counts were made on venous blood, potassium-ammonium oxalate being used as anticoagulant, in a Neubauer counting chamber. The number of separate counts at different times in each case varied from two to seven, a total of 82 counts being made on the 24 patients.

Results.

The results are shown in detail in Table I.

In the majority of cases the lymphocyte counts both before and after operation lay close to or within the normal ranges established by Osgood and his colleagues (1939), and the magnitude of the change in any particular patient was frequently not great. Since this study has been confined to patients whose lymphocyte count was determined both before and after thymectomy, each patient to this extent serves as his own control. Changes in lymphocyte counts after surgery have therefore been assessed with reference to the initial pre-operative counts for that patient, and not with reference to the usual values for normal persons of similar age and sex. In general, however, the pre-operative counts lay within or slightly above the normal range, while post-operative counts were towards the lower normal limits, a few being abnormally low.

The lymphocyte count is regarded as having fallen after thymectomy if all post-operative counts were lower than the pre-operative counts, or in patients receiving X

irradiation to the thymus, if the post-operative counts were lower than those obtained before the start of X irradiation. When no counts prior to X-ray therapy were available, the change was assessed on the basis of counts made during or after this. The lymphocyte count is regarded as having risen if all or the majority of the post-operative counts were greater than the pre-operative counts, and as being equivocal if the scatter of points was such that none of these conditions was satisfied.

Of the three patients without myasthenia gravis at the time of operation, in two (Cases 1 and 3) the lymphocyte count fell after operation, in one of these (Case 3) despite the subsequent development of myasthenic symptoms. In the third (Case 2) the results were equivocal; of two post-operative counts, in one the figure was lower than the pre-operative level and in the other higher. This latter count was taken when the patient was admitted to hospital with a moderately severe respiratory infection.

Nine patients received X irradiation to the thymus prior to thymectomy. This is known to result in lymphopenia; this effect was clearly seen in Cases 5 and 10 of the present series, in which lymphocyte counts were obtained before and after X-ray therapy as well as after thymectomy. In these instances the initial counts have been taken as baseline lymphocyte levels. In the remaining seven cases lymphocyte counts were made only during or after X-ray therapy. The lymphocyte count after thymectomy fell in five of the nine cases (Cases 5, 7, 8, 10, 11), rose in three (Cases 6, 9, 12) and was equivocal in one (Case 4). Two of the four patients without a relative post-operative lymphopenia were unimproved by operation. It is not possible from the present data to decide whether this X-ray induced lymphopenia is non-specific or is due to direct effects of irradiation upon the thymus.

Twelve patients did not receive X-ray therapy; in nine of these (Cases 13, 14, 15, 16, 18, 19, 21, 23 and 24) the lymphocyte count fell after thymectomy, in one the result was equivocal (Case 20), while in two (Cases 17 and 22) the final count was higher. In all these three, the therapeutic response to thymectomy was poor.

The absolute magnitude of the changes in lymphocyte counts varied. In nine cases (Cases 1, 3, 5, 7, 10, 11, 13, 18 and 19) the changes were considerable, of the order of 750 per cubic millimetre or more, and in all these post-operative counts were lower than those made before operation. In the remainder the degree of change was less. No patient showed more than a slight increase in absolute lymphocyte levels after operation, unless the initial counts were taken only after X irradiation of the thymus.

The change in lymphocyte count in patients with myasthenia gravis correlated well with the clinical response. This is shown in Table II, where the clinical response is graded according to the criteria of Keynes (1946). All six patients with complete remission after surgery (Group A) showed a fall in the lymphocyte count after operation, while such a fall was observed in only two of six whose condition was unimproved by thymectomy (Group D). Two of these died later of myasthenia gravis, one having a relative lymphocytosis after thymectomy (Case 22), and the other (Case 24) only a slight fall in the peripheral lymphocyte level. Only one of the seven patients suffering from myasthenia gravis who showed a considerable fall in peripheral lymphocyte counts experienced no improvement from surgery, and it may be noted that in this case all post-operative counts were obtained while the patient was pregnant. Pregnancy is known to produce lymphopenia (Yoffey and Courtice, 1956).

Discussion.

A fall in the lymphocyte count after thymectomy was observed in 16 of 24 cases, and in the eight in which such a fall did not occur some other factor was apparent. In four, initial counts were obtained only after X irradiation of the thymus, in one post-operative counts were made while the patient was suffering from a respiratory infection, and in three the therapeutic response to

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TABLE I.
Lymphocyte Counts Before and After Operation in 24 Cases in which Thymectomy was Performed.

Case Number.	Patient's Age (Years) and Sex.	Clinical Result. (See Table II.)	Number of Lymphocytes per Cubic Millimetre.								Direction of Change.	Notes.
			Months before Thymectomy.				Months after Thymectomy.					
			16 and Over.	15 to 6.	5 to 2.	1 to 0.	2 to 5.	6 to 15.	16 to 45.	46 and Over.		
No Myasthenia Gravis.												
1	6: F.	—		2510	7000	3780		1660			Fall.	—
2	38: F.	—				2210			2460 ^a 1680		Equivocal.	—
3	40: F.	—				2860		2000 2050			Fall.	Developed myasthenia gravis after operation.
Myasthenia Gravis: X Irradiation to Thymus.												
4	29: M.	D			2310	1870 1520				2650 1340	Equivocal.	—
5	13: F.	A			4130 ^a 2880 ^a	1480 1770	1930	1240	1120		Fall.	—
6	18: F.	D			1920	1610		1660 1980 4380 2060			Rise.	—
7	18: F.	B		2530		2770			1410		Fall.	—
8	19: F.	A			1980					1540	Fall.	—
9	26: F.	B		1320		2700			2910		Rise.	—
10	27: F.	C		3410 ^a 1730					2210 2540		Fall.	—
11	28: F.	D				1800			848 1160		Fall.	Pregnant during post-operative counts.
12	28: F.	C			1580	1060			2000 1640 1640		Rise.	—
Myasthenia Gravis: No X Irradiation.												
13	21: M.	A				3310				1760	Fall.	—
14	28: M.	C				2460				1880	Fall.	—
15	22: F.	B	1590 1310							1320 1070	Fall.	—
16	24: F.	A			1980	3500			1380	1520	Fall.	—
17	27: F.	D			1590		1820				Rise.	—
18	28: F.	A			2350		870			1510	Fall.	—
19	28: F.	B				2940		1500			Fall.	—
20	30: F.	C				3160	3600 2610				Equivocal.	—
21	32: F.	A	2000							1470 1890	Fall.	—
22	32: F.	D				1900	3380 ^a	2110 ^a			Rise.	Died of myasthenia gravis.
23	33: F.	C				2990				2580 1570 2770	Fall.	—
24	47: F.	D				1820	1760				Fall.	Died of myasthenia gravis.

^aLymphocyte counts made before therapy on patients receiving X irradiation to the thymus.

^aLymphocyte counts made while the patient had an infection requiring admission to hospital.

thymectomy was poor, suggesting incomplete removal of the gland or the presence of ectopic thymic tissue. No patient with complete clinical remission of myasthenia gravis after thymectomy failed to show a relative post-operative lymphopenia.

These results suggest, therefore, that in patients suffering from myasthenia gravis, and possibly also in patients with thymoma, thymectomy is normally

associated with a fall in the peripheral lymphocyte levels, and that this may be a useful prognostic aid in the surgical management of myasthenia gravis. This fall persisted in one patient for at least six years after operation.

It is considered, for two reasons, that these changes were not due to anticholinergic drugs. Changes were seen in patients without myasthenia gravis, who received no such therapy. Some patients showed a post-operative

lymphopenia although they received anticholinergic drugs in similar dosage both before and after operation.

Lymphopenia was observed in some patients who had little clinical relief of myasthenia gravis. This might suggest that the changes producing myasthenia gravis, whatever these may be, were not directly affecting the lymphocyte levels. In addition, the post-thymectomy lymphopenia was only relative, and the usual response to factors affecting the lymphocyte level was still apparent after operation. These included infection (Cases 2 and 22) and pregnancy (Case 21). No sex difference was apparent in this series, although selection of females for surgery in myasthenia gravis resulted in a preponderance of females.

The mechanism by which thymectomy influences lymphocyte levels is still speculative. Yoffey and Courtice (1956) have recently reviewed the many factors known to affect the peripheral lymphocyte levels. These include age, nutrition, exercise, haemorrhage, certain infections, pregnancy, X irradiation and endocrine influences, of

TABLE II.

Relation between Clinical Response to Thymectomy and Change in the Lymphocyte Count in 21 Cases of Myasthenia Gravis.

Clinical Response to Thymectomy.	Change in Lymphocyte Count.			
	Fall.	Equivocal.	Rise.	Total.
A	6	0	0	6
B	3	0	1	4
C	3	1	1	5
D	2	1	3	6
Total	14	2	5	21

which those from the thyroid and adrenal cortex appear to be the most important (Dougherty, 1952). The effect of thymectomy is unlikely to be due to simple loss of lymphatic tissue. Thymic hyperplasia or neoplasm in myasthenia gravis affects the endodermal rather than the lymphocytic cells, and the gland may have a reduction rather than an increase in lymphatic constituents (Castleman and Norris, 1949). Florey (1952) has shown that even extensive surgical removal of lymphatic tissue is without permanent effects upon the peripheral lymphocyte level in experimental animals.

A further possibility is that some hormonal mechanism is involved, although no generally acceptable evidence of an endocrine function of the thymus has yet been produced. Thymoma may occasionally be associated with anaemia or pancytopenia (Bayrd and Bernatz, 1957), and myasthenia may complicate thyrotoxicosis. Metcalf (1956 and 1957) has recently shown that in mice thymectomy is followed by a fall in the peripheral lymphocyte count, and that extracts of human and mouse thymus produce a lymphocytosis when injected into mice. He has therefore suggested, as a possible explanation of his results, that the thymus may secrete a hormone, the lymphocytosis-stimulating factor, which in part affects the peripheral lymphocyte count. The present results in no way disagree with Metcalf's hypothesis.

Summary.

1. Absolute lymphocyte counts have been made before and after operation on 24 patients who underwent thymectomy. In 16 cases the post-operative counts were lower than the pre-operative, in five they were higher, and in three the results were equivocal. When the lymphocyte count failed to fall after operation, some other factor was present.

2. In patients suffering from myasthenia gravis, the fall in lymphocyte count correlated well with the clinical result, suggesting that lymphocyte levels may be of possible prognostic value in these circumstances.

Acknowledgements.

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ADVANCES IN SERVICE PSYCHIATRY ABROAD.¹

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THE service psychiatrist cannot restrict himself to the academic aspects of psychiatric treatment. He has to venture out of the hospital into groups of men in uniform. In 1956 and 1957 I visited 16 military installations in the United States of America and England, with the object of studying them from a psychiatric point of view (Cawte, 1956). These installations were responsible for a wide range of functions of the Navy, Marine Corps, Army and Air Force of the two countries. Conscious of the lack of experience in these fields, and remembering Alexander Pope's adage "Fools rush in where angels fear to tread", I nevertheless rushed in, wherever they would let me. It was a little curious that they arranged for me to spend more time in the "brig" than anywhere else; but despite this, I had a wide enough experience to acquire a general picture of the recent advances in service psychiatry.

There is today reasonable agreement on the principles of psychiatry in the armed forces. To those who are not familiar with psychiatrists in a reasonable state of agreement, this may come as a surprise. I do not mean that service psychiatry has arrived at a state of knowledge beyond that of civilian psychiatry. It is the structure of military medicine which makes it simpler to embody advances into official practice, and to ensure that they are utilized properly. In addition, there are genuine advances peculiar to service psychiatry, and it is a pleasure to present some of them to you, knowing, as I do, of the consensus amongst service doctors as to their value.

Psychiatric Screening-Out of the Unfit.

One of the questions which a service psychiatrist is most frequently asked concerns preventive medicine. In each war, and in the periods of peace also, our services suffer an unfortunate load of neurosis and other mental disorders. Would it be possible to screen out potential mental casualties at the induction centre and recruit

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camp, thus lowering the incidence of these disorders in the services? It would save an immense amount of time, trouble and anguish if men who were unable to adjust themselves to military life were released, before repeated admissions to hospital, or repeated disciplinary troubles such as "A.W.O.L.", enforced their discharge.

Can it be done? The United States Armed Services attempted just this during World War II, when they were sustaining severe losses from mental illness (U.S. Army Staff Study, 1956). A strict screening of recruits was introduced in the hope of checking these losses. For the whole war, the rate of psychiatric disqualification was 11.54% of all men coming up to the induction centre. A staggering figure! Yet this screening was totally ineffective in lowering the mental illness rate within the services. This casualty rate for a time maintained itself at the crippling daily rate of 30 servicemen per 1000, either excused-from-duty or in-patients (U.S. Army D.D. form 44, 1956).

After this, the psychiatric rejection rate at the induction centres was eased, more men being made available for service; from 11.54% it was lowered to 2%, and has been kept about there ever since. At the recruit camp a similar policy is now applied to that at the induction centre. The U.S. Navy is an exception to the rule, in that it maintains psychiatric screening units at the "boot" camps (Hunt, 1954); but a majority of military psychiatrists now argue against the value of close psychiatric screening of the men in the recruit camp (Glass, 1956). They are increasingly aware that men with psychoneurosis and character difficulties can perform effectively. Instead of psychiatric screening, they favour the policy of "screening-in-depth", which means that the recruits should be permitted to screen themselves out by their own behaviour during the initial training. They hold that too many mistakes will be made if early psychiatric screening is attempted. For example, a recruit who is interviewed by the psychiatrist, and on paper appears to be passive-dependent, might be screened out when in fact he might fight an excellent war in a supply office though not on a gun, and so prove a good soldier. The converse might be true of a recruit with an aggressive personality. Such individuals might serve as well as those with normal personalities. It is a matter of finding their niche—which is the task of classification and assignment.

Why, then, does the U.S. Navy practise psychiatric screening at the "boot" camps? I was fortunate enough to be able to study the Navy system of psychiatric selection at the training centres, and to be taught some of the methods, including the brief (stress) screening interview. It was a fascinating experience. But the view which I ultimately adopted, and which is shared by a majority of military psychiatrists in England and America, is that we need to know more about the particular elements of character which foretell mental breakdown in service. Until we do, psychiatric selection will continue to be carried out more or less blindly. To be perfectly fair, it must be pointed out that it is the sort of procedure adopted by the Navy which will eventually provide this information.

This is what I recommended to the Medical Director-General of my own service: whereas a psychiatrist could do useful work in screening men coming to duty, there are other places where his efforts are more urgently needed.

Psychological Selection is Valid.

I am concerned to have it understood that I am not referring to psychological selection, only to psychiatric screening. Psychological selection is a part of efficient military functioning. Men coming into the service must be systematically assessed, classified and assigned to the various branches according to their aptitude and ability. Tests of mechanical, arithmetical and clerical ability are well validated and must be included in the basic psychological classification procedures. More advanced tests have proved their usefulness in predicting success in particular fields; for example the "flight aptitude rating" of air cadets (Dunlap, 1956).

A Basic Principle of Military Psychiatry—the Emphasis on Out-Patient Care.

After the attempts to screen out potential psychiatric casualties from the services were eased, the casualty rate surprisingly enough fell. This paradoxical effect was produced by several factors acting together.

The most obvious factor is, what constitutes a psychiatric casualty in the eyes of the responsible medical officer? It is now realized that military psychiatry demands from the psychiatrist a basically different attitude compared with civilian psychiatry. Success in therapy is largely determined by the degree to which the psychiatrist identifies himself with the needs of the group, as opposed to the desires of the individual. Patient and psychiatrist work at the level equivalent in combat to the battalion aid station. The term "decentralization" (Glass, 1953) refers to this policy of assessment and treatment as far forward as possible, rather than in the hospital. Once in hospital, with the ties which bind him to his group severed, the patient's condition frequently becomes worse. Hospital beds should be limited to psychotic and severely psychoneurotic patients rather than given over to observation of subjects about whom the battalion medical officer cannot make an accurate forecast, so that he is tempted, in the absence of a psychiatrist, to send them to hospital.

This principle was worked out in combat in World War I by the British, who found that treatment of "shell-shock" patients near the front line was associated with a considerable improvement in recovery rate. The history of this policy is a fascinating one; it was forgotten and empirically discovered during each of three wars. It is a history which should be familiar to all military doctors, lest the expensive mistake be made again.

The Principle of Out-Patient Care in Peace-Time.

In peace-time an attempt is made to apply this principle, which was painfully learned in combat. For example, in the United States, wherever the Army maintains a large body of troops, there is a mental hygiene consultation service. Each one has a post psychiatrist, who sees 200 to 300 soldiers a month as out-patients. The in-patient facilities are meagre—perhaps 5 or 10 beds; neurotic patients are rarely admitted, and most psychotic patients have to be transferred to a large hospital anyway. The policy is that evaluation, treatment and disposal of non-psychotic patients will, except in extremely rare circumstances, be carried out as out-patient procedures. Retention on duty facilitates therapy and reduces non-effectiveness. As it is part of the psychiatrist's appointed task to keep men on duty whenever possible, he has frequently to consult with the unit commander and the battalion medical officer to encourage the line to tolerate a man who is not 100% effective, and to find the best way of utilizing him.

In their search for a name for this sort of service, the U.S. Air Force has gone further than the Army. At one Air Force base where I stayed, the unit was simply called "consultation service".

The Applicability of These Principles in Other Services.

The policy of treating mental illness as far forward as possible was worked out in the Army; the Navy and Air Force, because of their structure and special needs, cannot make equal use of the division or out-patient psychiatrist. I discussed this problem with a number of Naval psychiatrists and the following points were made:

1. There is probably no place for a psychiatrist in a ship at sea. The number of men is too small for it to be economical. (Flight surgeons in aircraft carriers must have some psychiatric training.) Also, it has been observed that there is in general a low incidence of mental reactions of disabling severity in a ship at sea (Braceland, 1944). Even in a ship engaged in battle at sea, psychiatric casualties are uncommon; the reason is probably connected with the fact that in this situation, non-effective behaviour does not help escape from the threatening environment—

in fact it makes the environment more threatening. Also, powerful forces are operating in the group to promote cohesion. When the ship arrives in port, of course, it is a different story. In addition, the dichotomy of Navy personnel into sea-duty and shore-duty has already ensured good health in the ship, by the retention on shore of those who are less fit at a given time.

2. There is a place for a psychiatrist in a hospital ship. In general, the U.S. Navy uses fewer hospital ships than do other navies, preferring to keep more elaborate sick-bays in the fighting ships.

3. At the naval base, there is definite need for a psychiatrist. If possible, men should be treated in their ships and visited by the psychiatrist. If transfer to the base hospital is necessary, the men should be returned to the ship as soon as possible; treatment may continue on an out-patient footing.

In the Military Hospital Psychiatric Unit.

Mental patients in the Army must obviously go to hospital, though apparently not in such numbers as was previously thought. The psychiatric unit of the military hospital is changing, as we realize when we read the following extract from official army regulations: "In combat psychiatric treatment will be instituted in a military rather than a hospital atmosphere." I asked some military medical officers to define "a military rather than a hospital atmosphere", and they made the following suggestions, which they thought applied not only to combat, but also as general principles to other levels of treatment and at other times. The concept involves a considerable modification of our idea of what a hospital is.

The patients should be housed in barracks or tents, rather than in buildings. They should continue to wear their uniforms rather than pyjamas or convalescent suits. The ward attendants similarly should not wear white hospital uniforms, and there should be no nurses present. The patients remain up and about, perform work details where necessary, make their beds and wait on themselves for meals. The conventional hospital atmosphere is avoided at the divisional psychiatrist's facility by dispensing with sterilizers, oxygen cylinders and other suggestive fittings. The same applies to the psychiatric facility at the level of the clearing station. Personnel at all times foster the expectation of early return to duty after a brief rest and simple treatment.

Another interesting feature of modern military hospital psychiatry is the emphasis on group approach. In a leading Navy receiving ward, for example, a community meeting of the men is held for an hour every morning after sick call (Wilmer, 1955). Such measures as suggestion, reassurance and indication of an early return to duty are more effective in group than in individual interviews. The basis of therapy is social interaction between the men, development of the group, combined with whatever special treatment time permits. This is psychiatric first aid, but in the military setting no apology need be made for its superficiality—which is more apparent than real. There is an avoidance of complicated procedures, which foster the idea of severe illness, such as prolonged sleep, insulin subcoma and non-convulsive shock therapy, and narcoanalysis. Little attention is paid to analysing the personality make-up which might explain the present breakdown. Every effort is made to preserve the individual's unity with his mates in the group, which is invariably stronger than unity with the Service, ideology underlying the need for the Service, or the Nation.

Prospect.

This discussion has been about some of the advances which have been made in service psychiatry up to the present time. It is reasonable to assume that, however sound and realistic these principles are today, they may be irrelevant tomorrow. Tomorrow we may be more concerned about the management of mass casualties, and the psychiatrist, to play his part, must try to answer two questions: (i) What are the attitudes which are inhibiting reasonable defence preparation in the nuclear age? How can psychiatry assist our plans for survival? (ii) Can

we predict the behaviour of our population if a thermonuclear weapon goes off over our cities? Will the survivors panic and go to pieces?

With regard to the prevention of disaster, and the treatment of international paranoid reactions, this is not the province of psychiatry. In a general way we can apply the modern belief, stated by Sullivan (1946), that "a large part of mental disorder results from, and is perpetuated by, inadequate communication". So if we foster communication, through our democratic structure and through the United Nations, we ought to be heading in the right direction. But many factors outside the medical sphere are involved here—social and economic and personal factors, not the least of which is that some psychopathic leader, confronted by ruin, may in desperation start a nuclear war.

I think most of us agree that defence is the only mature attitude for a population, and the other attitudes represent insufficient thinking through of the problem. But, confronted by the possibility of thermonuclear disaster, the mind protects itself by the mental mechanisms of denial and isolation. We cannot over-estimate the strength of these mechanisms. They are the reasons why the earnest recommendations of the military and civil defence experts are tolerated with distaste, or totally ignored. Perhaps the only way to overcome these mechanisms is through persistent education and training; there seems to be no quicker or better way. This is one of the roles of the military medical officer.

Finally, what of the behaviour of our population after a disaster? We know that panic was not a feature in Hiroshima and Nagasaki. Entrapment in a confined space, such as happened at the notorious "Cocoanut Grove" fire in Boston, seems to be the chief stress which produces panic in a disaster. In Japan, the feature was the stunned, highly suggestible, and easily led population. On the assumption that our people would behave similarly, our task is to plan where such a population can be led; whether, for example, it would be better to have it shift rubble about than do nothing. The present information is that even this sort of activity would help keep our population hopeful, forestall mental breakdown and reserve our hospital facilities for those patients who could be benefited most. These are not answers; they are the sorts of questions we must now set ourselves.

Summary.

1. In 1956-1957, investigating current practice of service psychiatry, I visited 16 military installations in U.S.A. and England.

2. World War II statistics question the value of early screening-out of potential mental casualties, as a means of lowering the casualty rate within the services. Psychological classification of men, on the other hand, is part of efficient military functioning.

3. Modern service psychiatry emphasizes out-patient care, with avoidance of in-patient and excused-from-duty status. This emphasis is effective in lowering total disability in peace-time as well as in combat. Differences in application of this principle in the Navy as contrasted with the Army are discussed.

4. Psychiatric units of service hospitals need to create a military rather than a hospital atmosphere. A vital part of therapy in these units is group work, aimed at strengthening the ties which bind together those in service.

5. An indication is given of problems for service psychiatry in thermonuclear warfare.

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as an International Fellow, to study various fields of psychiatry, on behalf of the South Australian Government,

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A SURVEY OF PELVIC CARCINOMA.¹

By R. FRANCIS MATTERS,
Adelaide.

It is not proposed to go into statistical data regarding carcinoma of the pelvis, but rather to examine the diagnostic and pathological features and the results of treatment.

To do this it may be simpler to divide pelvic carcinoma into the following three groups: (i) cancer of the vulva and vagina; (ii) ovarian cancer; (iii) cancer of the uterus. It is proposed to consider each section and later to summarize the whole field.

Carcinoma of the Vulva.

This is a condition which could be diagnosed very early if women would seek advice when any vulval lesion appeared, and also if general practitioners would refer to a specialist any patients about whom they are in doubt. Biopsy gives the final diagnosis; but there are many phases between a small excrescence and the carcinomatous ulcer which may be puzzling, and unless the biopsy specimen is taken at the actual area involved, a carcinoma may be missed.

Leucoplakia is a form of hyperkeratosis involving the labia majora. The white area may extend to the anus; in some cases the superficial strata crack, and in these fissures mitotic figures occur and a cancerous condition may develop. Leucoplakia is regarded as premalignant, and many cases of cancer of the vulva begin as leucoplakia.

The intraepithelial condition called Bowen's disease has hyperkeratosis with sinus formation, and should be regarded as malignant and treated by early extirpation.

Cancer has been shown to develop in cases of kraurosis vulvæ. Formerly kraurosis vulvæ was regarded as having no association with malignant disease of the vulva; this, unfortunately, has proved to be incorrect.

The area of carcinoma on the vulva becomes a hard, bone-like induration, and tends to spread locally, or it may spread by contact to the opposite side. The cancer cells tend to permeate to the inguinal glands, and so to the obturator and iliac glands and later to the lumbar

glands. The results of treatment depend upon how early the lesion is diagnosed, for the earlier the excision the less likelihood is there of metastasis. If later excision is performed, the cancer cells may have gone beyond the range of local surgery.

Here it should be noted that many women allow a gross lesion to develop before seeking advice, and in many cases treatment is begun only when the cancer is far advanced. Fortunately the neoplasms are often associated with inflammation which causes local adenitis, and this blocks the lymph channels and glands, thus barricading the natural pathways for the cancer to metastasize.

The diagnosis must include a search for premalignant lesions and lesions *in situ*, and even if the biopsy results are negative and the lesion persists, the entire vulva should be excised and submitted for examination of multiple sections (Isaacs and Toper).

The application of radium to the lesion plus X-ray therapy to the glands has given a 30% five-year cure rate. The mature types of cells resist radium, while other tissues may be injured by irradiation and tend to ulcerate. In contrast to the results of irradiation are those from radical vulvectomy with extirpation of the glands as performed by Stanley Way; this method gives a 60% cure rate with an operative mortality rate of 12%. This massive one-step operation for removal of glands and vulva has not an appreciably greater cure rate than the more simple excision of the vulva and removal of the inguinal glands, especially in view of the high operative mortality and the relative infrequency of involvement of the iliac and obturator glands.

Mortality and morbidity are inevitable, because the subjects are usually old and frail and the operation is extensive and mutilating.

The more moderate excision advocated by Hunter of Manchester, in which the inguinal glands are removed but the iliac glands are not excised, gives nearly the same results as Way's, largely because the patients have far lower mortality and morbidity.

Carcinoma of the Vagina.

Carcinoma of the vagina is very rare, and it arises usually after the menopause. It is mainly an epithelioma, the treatment for which is Wertheim's panhysterectomy with removal of the vagina. Recent reports on the use of radium and X rays are encouraging; but the wide excision has produced the best results so far although it involves far more immediate mortality. Owing to the rarity of the condition, the number of cases for comparison is too small to give reliable information.

Malignant Conditions of the Ovary.

Ovarian carcinoma varies from a primary lesion in the ovary, mainly adenocarcinoma, to cases in which the malignant condition of the ovaries, which is usually bilateral, is secondary to primary lesions usually in the stomach. These are Krukenberg tumours identified microscopically by the signet-ring cells, and on bimanual clinical examination the ovaries are firm, enlarged and irregular.

Malignant tumours in the ovary grow quietly and insidiously without early warnings. Follow-up investigation of patients giving false-positive findings on examination of smears at Massachusetts General Hospital has indicated that a number of these false-positive results are associated with ovarian carcinoma.

Ovarian carcinomata may develop enormously before metastasizing; more frequently they actually disseminate by implantation in the peritoneum, which, because of this irritation, exudes fluid, and for this reason ascites is frequently associated with these cases. There may be local metastasis, when the cancerous cells erode through the capsule of the tumour and plaques form throughout the peritoneal cavity.

When ovarian tumours have become obvious, they may have begun to metastasize and may be inoperable. Any symptom or sign of an ovarian tumour should be treated

¹ Presidential address, delivered at a meeting of the Section of Obstetrics and Gynaecology, Australasian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

by laparotomy; otherwise malignant ovarian tumours may escape detection.

The usual treatment of carcinoma of the ovary is by panhysterectomy. However, Kottmeier, following the original work of Heyman of Stockholm, places radium in the uterus and cross-fires with a radium bomb, either before or after excision of the ovaries, depending on the size of the tumour; he retains the uterus when the ovaries are removed, as the uterus is a convenient vehicle for the radium.

A few patients have been salvaged by X-ray therapy. A radium or a cobalt bomb or the orthotron may be used after operation has revealed a hopeless outlook; the radium bomb appears to have given the greater salvage. The cobalt bomb and the orthotron have been used more recently. In Stockholm I saw a patient with an inoperable ovarian cancer treated with radium bomb, who was alive two years later.

Müller of Zurich treats these apparently hopeless cases with injections of gold isotopes and has attained some success; I saw some of his patients in Zurich. Ullery of Ohio reports his results of treatment by radioactive gold administered intraperitoneally after paracentesis; the results at present appear to be palliative and not curative.

Squamous cell carcinoma of the ovary is extremely rare, being dependent on a dermoid cyst or teratoma for its origin, as that is the only occasion on which an ovary has ectodermal tissues in its constitution.

Teratoma of the ovary tends to become sarcomatous in a relatively high percentage of cases; but this condition itself is extremely rare.

Carcinoma of the Uterine Body.

This has a somewhat insidious development, and may provide little of diagnostic value in the earlier stages, except possibly a watery discharge and sometimes blood loss which does not conform to a regular cycle.

The diagnosis may be helped by examination of vaginal smears. These smears it is proposed to discuss later. One usually requires a diagnostic curettage to be quite certain of the diagnosis, and this should be an essential part of the diagnostic examination. According to Rosenblatt and Smith, the diagnosis may be discovered only on examination of sections of the uterus after hysterectomy; this has been demonstrated in their series of cases.

The best treatment of uterine cancer (corpus) is found to be panhysterectomy with pre-operative intrauterine insertion of radium, or by application of radium to the vault after operation as suggested by Charles Read.

From the records which have been investigated very thoroughly, the intracavitary insertion of radium followed by panhysterectomy has given the best results; this treatment provides a five-year cure rate of over 80%. Kottmeier relies on radium cartridges, which he packs into the uterine cavity in large numbers, putting as much as 300 milligrammes into the uterus.

However, the results are not as good as those of treatment by hysterectomy. In my own series of cases, I used intrauterine insertion of radium prior to operation, and at the time of operation the cervix was sutured from the vaginal aspect so as to make it watertight before being pulled through the abdominal cavity. With this procedure there was a five-year cure rate of 84%. This is regarded as a very favourable result for treatment of adenocarcinoma in this country.

In some of these cases the cancer cells had infiltrated through the myometrium out to the peritoneum, which was not invaded, and the lymphatics in the broad ligaments and iliac glands were usually not involved, especially when the glandular structure of the carcinoma was maintained and the cells were well differentiated.

Growths with immature and undifferentiated cells were infrequent in this series. This falls in line with the reports by Te Linde, whose surgical results gave a five-year cure rate of from 70% to 90%, while the five-year cure rate from the Stockholm Radiumhemmet is below

60%. Kimbrough and Muckle gave a 92% five-year cure rate.

Carcinoma of the Cervix.

This condition, which is usually a squamous cell epithelioma, is more frequent than any other form of cancer in women. There is a high mortality rate with cervical cancer, because over half the patients do not seek advice until they have passed stage II. These latter patients have little hope of final recovery. It follows, therefore, that early diagnosis is of paramount importance, and the methods of diagnosis will be discussed later.

Carcinoma of the cervix is much commoner in multiparae than in nulliparae, and in the taking of histories, this should always be borne in mind. The stages 0 to IV can all be defined, and the pre-invasive stage, or carcinoma-in-situ (stage 0), may be diagnosed by the Papanicolaou smear or by actual biopsy.

J. V. Meigs gives a considered opinion on cervical cancer when he states that "we are trying to substitute intelligence for dogmatism in the treatment of cancer of the cervix". He states that certain patients respond to radiation treatment, others to surgical treatment, and some to both. Meigs thinks that in some cases radiation treatment so affects lymph nodes as to make surgical extirpation successful; but in his opinion "the combination of X-ray and radium treatment plus surgery is a mistake". He goes on to say that "cancer can and should be curable in at least 80% of early invasive cases". In a personal interview, Meigs told me that his belief that radium plus surgery was a mistake was due to the possibility of dissemination on the introduction of radium.

This, then, brings us back to the necessity of early diagnosis, which Meigs again stresses should be made by careful observation of the cervix and by care in obtaining material for smears, making colposcopic investigations and taking biopsies.

The method suggested for obtaining vaginal smears is to aspirate the pool behind the cervix before any digital or speculum examination is made. This follows the original work of Stockard and Papanicolaou, and has been continued by Papanicolaou, and also in Meigs's clinic by Ruth Graham. After aspiration of fluid, the cervix may be visualized by gently introducing a water-lubricated speculum, and an Ayre spatula scrapes the epithelium at the muco-cutaneous junction. Horn and Ashworth use a more pointed spatula, which obtains intracervical epithelium. The gigantism of the epithelial cells and the large, irregular nuclei indicate early malignant changes if these cells are found in the slide.

After the smear material has been taken from the cervix, a colposcope is used to inspect the cervix with a magnification of 10 to 20. Abnormal types of epithelium may be observed by the colposcope—ectopic columnar epithelium, or leucoplakia, or other abnormal squamous epithelium. These points are more obvious after the cervix has been swabbed with acetic acid. Antoin of Vienna places a high value on the colposcope for differentiating a simple from a more serious lesion of the cervix, and he holds that the colposcope is of very great value in making punch biopsies. Confirmation of these statements is given by Limburg and Uhlmann, who have a large clinic in Hamburg which was begun by Hinselmann; there I saw as many as 40 colposcopic examinations made each day.

The results of surgical treatment of pre-invasive cervical cancer are good. The operation is that of hysterectomy, a small cuff of vagina being taken and one or both ovaries conserved. This has given excellent results, both by Meigs and also by Te Linde.

We do not see as many of these patients as we should. Many patients with cervical erosion should have a cervical smear test, a colposcopic examination or a biopsy before treatment by cautery. Any patient with contact bleeding should have a biopsy.

Meigs states that "cancer *in situ* can be diagnosed histologically nearly 100 times out of 100".

The patients with stages I and II cancer may be treated either by radium or surgically. As in only about 15%

of cases are the iliac and obturator glands involved, this means that 85% of these patients should be curable by radium. However, all cervical tumours are not radio-sensitive; otherwise radium could be regarded as being as effective as the Wertheim operation, with lower morbidity and mortality. There are, however, the 15% of patients whose involved glands would be removed by Wertheim's operation, and thus panhysterectomy would offer the best results if morbidity and mortality were not involved in the five-year cure rate.

Graham and Graham have studied a sensitization response to radium and also a radiation response; this is found in the benign basal cells and not in the cancer cells. They have found that certain patients respond to radium and others do not.

Warren found that if, after radiation treatment, a biopsy showed cancer with little evidence of radiation change, the patient would succumb unless surgical measures of the Wertheim type were carried out.

Patients with extension to the pelvic wall may have inflammatory involvement which makes the tumours appear to be in stage III, and with radium treatment the condition may improve and be found to be only in stage II and thus become operable.

Stages III and IV patients are treated by radium and X-ray therapy. There is often a temporary improvement; but later treatment for pain may be necessary and requires morphine and the like. If it is localized to one area, however, the pain may be relieved by division or blocking of the sensory nerve roots, and the patient may then continue for some time in a useful capacity. The five-year cure results are very poor in these stages III and IV.

Carcinoma of the cervix should be diagnosed early if, as in Switzerland and Scandinavia, women were persuaded to have an examination in the event of any unusual happening, from vaginal discharge to irregular bleeding. Schmitz describes our investigations under the title "Opportunity and Cervix Cancer". The use of the colposcope, as in Germany, Holland, Switzerland and Austria, is a routine procedure in all gynaecological cases. We use it in Adelaide in selected cases. In those which we suspect on colposcopic findings, biopsy is carried out.

Dr. Malcolm Coppleson, of King George V Hospital, Sydney, has recorded an excellent array of colposcopic photomicrographs, which have been of great diagnostic value in that hospital.

The Schiller's iodine test is valuable as an indicator for biopsy and also with the colposcope. Meigs uses double-strength Schiller's solution, which he states does not burn the tissues, is dark enough to give good staining to the cervical epithelium, and indicates abnormal epithelium where the iodine does not stain.

Apart from these examinations, there should be a circular biopsy of the muco-cutaneous area, or punch biopsies taken in parts indicated by Schiller's test or colposcopy. Punch biopsies have the advantage of being possible to perform in consulting rooms.

The treatment of cervical cancer by radium or surgery is mainly dependent on the stage and on the condition of the patient. It is for us to decide which method of treatment is better, and whether we shall use surgery or radium or a combination of irradiation and surgery. If a stage 0 lesion is found, the treatment should be surgical, as has been mentioned earlier; the operation is a total hysterectomy with removal of a small sleeve of the upper part of the vagina, while one or both ovaries may be conserved. In stages I and II, if the patient's general condition is good, I prefer intracavitary irradiation followed a few weeks later by a Wertheim type of operation, as performed by Schlink of Sydney. Stages III and IV lesions are suitable more for palliative and salvage therapy by radium. Here, however, it is surprising how some patients improve and have an unexpected survival rate. Intracavitary radium implantation and a colpostat are employed if the cervix is symmetrical; otherwise a screen box pack is used below the cervix.

Involvement of the bladder or rectum or of both may be dealt with by exenteration, as practised by Brunschwig,

of the Memorial Hospital, New York. The mortality is obviously very high and there is considerable morbidity; but in the hands of those who have the necessary equipment in anaesthesia, blood transfusion, etc., the results have justified the extreme measures adopted.

Martius of Germany discusses X-ray therapy in the treatment of cervical cancer. He considers that highly fractionated doses and the principle of small-volume irradiation constitute the most recent great advances.

The linear accelerator and the cobalt bomb have been introduced more recently, and in Adelaide we have had the linear accelerator functioning for only a few months. This and the cobalt bomb are salvaging a number of cases. It is thought that the hard beam is more selective of carcinomatous tissue, especially the anaplastic cells, than is the 200 megavolt X ray. There is certainly far less skin burning.

There would appear to be no one fixed method of dealing with cervical cancer. Therefore we can find only one stage which has a defined treatment, and that is stage 0, which is best treated by surgery.

In this address it is necessary to visualize the prospects afforded by the various treatments of cervical cancer. If it were possible to educate people sufficiently, there should be no necessity for such mutilating operations as exenteration. The cervix can be examined and visualized, and with present-day methods of investigation, the condition should be diagnosed at a time when it can be treated satisfactorily. It is necessary to educate the public. It is necessary also to persuade the general practitioners to take a careful history and to visualize the cervix with a speculum. If it is possible, all patients with cervical erosions should have colposcopic investigation, and examination of smears, and if there is any suspicion at all, a biopsy should be carried out.

Carcinoma-in-situ is curable by surgery, as has been shown in the large clinics of Johns Hopkins Hospital and the Pondville Hospital of Boston, United States of America. In stages I and II there is a high possibility of cure by intracavitary implantation of radium followed by surgery. In stages III and IV there is, in the main, only a possibility of cure, and in a percentage of the more advanced cases salvage may be possible. The amount of literature on cervical carcinoma indicates the therapeutic difficulties.

Discussion.

When there is any suspicious condition in the pelvis, whether vulval, ovarian or uterine, the utmost ingenuity is necessary to try to find what the condition is, and if it proves to be malignant but is diagnosed early, surgery provides the best prospects except in cervical and uterine cancer; in this, intracavitary irradiation precedes extirpation.

Finally, reports compiled by men of great repute give us five-year cure results of over 90% in stage 0.

Surgery alone in stages I and II gives a five-year cure rate of approximately 80%, while intracavitary irradiation followed by surgery is stated by some gynaecologists to give as high a rate as 85%; but in Adelaide we have a five-year cure rate of only 53%. This is approximately equal to the five-year cure rate in over 1500 cases in stages I and II at the *Radiumhemmet*, Stockholm. Here Heyman also has produced good results in stage III (28%) and stage IV (11%).

The results following exenteration are about 6%. These figures indicate how far we are from perfection in treatment of carcinoma of the cervix; but the results of treatment in the early stages show great possibilities if diagnosis is made early in the disease.

Conclusion.

Ovarian malignant disease will continue to be a great trial until we find some method of recognizing malignant changes in the ovaries before the adenocarcinomatous tissues have spread and developed beyond surgical aid.

The satisfactory treatment of cancer in the pelvis depends upon the early recognition of the lesion, and then

the appropriate treatment must be given, whether by irradiation or by surgery.

If the best method of treatment is adopted for the lesion in the early stages, then it is reasonable to expect a high percentage of cures.

THE FIRST SUCCESSFUL OPERATION FOR PERFORATED PEPTIC ULCER.¹

By R. S. LAWSON,
Melbourne.

It is the essence of an acute emergency that it cannot be arranged ahead, and though plans may be laid to deal with it, the time and place of its occurrence are entirely fortuitous. Chance favours those who are prepared, be they ever so humble.

So it is that the first successful gastrectomy for cancer of the stomach—not an emergency, but a procedure carefully planned and rehearsed—was performed in a famous hospital in Vienna by the celebrated Professor Theodor Billroth in 1881. But the first success in dealing with the acute abdominal emergency of a perforated peptic ulcer was not achieved until eleven years later, and then at the hands of an obscure provincial surgeon, Dr. Heusner, who was patiently waiting his chance in a small and undistinguished town called Barmen, in western Germany. Barmen then had a population of about 100,000 people. It is in the heart of the industrial Rhineland and chiefly notable for its textile factories and the manufacture of dyestuffs.

On May 18, 1892, a factory-owner, 41 years old, living in this town, was seized with an agonizing pain in the pit of his stomach, at 2 o'clock in the morning. He summoned the family doctor, Dr. Kriege, who arrived at 4 a.m. and promptly gave him an injection of morphine. This procedure was repeated the next day at noon. However, the pain persisted, and Dr. Kriege diagnosed a perforation of a gastric ulcer. He had good support for such a belief, for he had attended the patient on at least four occasions over the previous two years with bouts of melæna, and he was also aware that the patient's younger brother had died some years earlier from this very same condition of perforated peptic ulcer. Dr. Kriege, himself not a surgeon, showed that he was nonetheless possessed of that sense of urgency which is in the make-up of every good doctor. His surgical confrère, Dr. Heusner, was away on holiday; but Dr. Kriege sent an urgent message by the electric telegraph recalling him immediately. Meanwhile he gave orders for preparations to be made at once in the patient's home for the operation which he considered necessary.

Dr. Heusner arrived back for the consultation at 6.15 p.m. and confirmed the diagnosis, and without further ado the operation was commenced there and then.

Dr. Kriege does not mention it, but one presumes that he gave the anaesthetic and that it was chloroform. The abdomen was opened by a midline incision which disclosed peritonitis, but a prolonged and careful search failed to reveal the perforation. The gastro-colic omentum was then divided in order to inspect the posterior surface of the stomach, but again without result. Not to be defeated, Dr. Heusner then extended the incision transversely across to the left, cutting the rectus muscle. Finally the perforation was discovered high up on the anterior surface ("3 cm. from the cardia")—a most unusual and difficult location for such a condition. With retraction of the left lobe of the liver and of the costal margin, it was at last possible to oversee the perforation. A drain of iodoform gauze was placed down to it. By this time, daylight began to fail and candles were brought to enable the operation to be concluded, which it was, at about 9 p.m.—i.e., after two and a half hours under anaesthesia.

¹Read at a meeting of the Section of History of Medicine, Australasian Medical Congress (B.M.A.), Tenth Session, Hobart, March 1 to 7, 1958.

The patient was thought to be as well as could be expected.

Thereafter, feeding *per rectum* was instituted for the next 12 days, with such delectable delicacies as meat-broth, egg-yolk and Carlsbad spa water. At the end of three weeks the patient was taking normal diet *per os*.

A month later a second operation for left-sided empyema was necessary; but after this the patient made a good recovery, and by November—i.e., after six months—he had entirely regained his former weight and energy and was back at work.

This résumé is from the report of Dr. Kriege, which appeared in the *Berliner klinische Wochenschrift* of 1892, at pages 1244 and 1280. The translation which I had arranged for was sent to my home one Saturday about a year ago. By a curious chance I was called out to Heidelberg Repatriation Hospital that evening, where I had to oversee a perforation of a duodenal ulcer. Of course it is a very ordinary performance nowadays, and I have done it myself over 100 times. But reading this report on returning from the hospital, I could not restrain my admiration for the great courage and devotion of Dr. Kriege and Dr. Heusner in their pioneer performance of sixty years ago. One cannot but think that they attended to their patient in the very best traditions of the profession.

I was moved to write to Sir Zachary Cope that some attempt should be made to discover the whereabouts of this remarkable performance, and perhaps adorn the grimy town of Barmen with some mark of recognition. Unfortunately he informs me that the town of Barmen (now merged into the great industrial city of Wuppertal) was severely bombed during the war, and it was thought that at this time the gesture would be unpropitious. This should in no way diminish our admiration of and our gratitude to these two very fine doctors.

Reports of Cases.

PICK'S DISEASE (CIRCUMSCRIBED CORTICAL ATROPHY).

By K. D. MURRAY,
Department of Pathology, University of Adelaide.

A CASE of Pick's disease (circumscribed cortical atrophy) was presented in this Journal by Edwards and Swan in 1942. A second case was presented to a clinical meeting at Broughton Hall Clinic in Sydney in 1948 under that name (see M. J. AUSTRALIA, 1948, 1: 630). It referred to a male, aged 59 years, presenting with headache, memory loss, disorientation and having a reasonable Rorschach performance. All these features are unlike Pick's disease, and suggest presbyophrenia or Alzheimer's disease. In 1940, McGeorge contributed a special article on dementia, including Pick's disease, which he described as showing "cortical atrophy, which is relatively diffuse but with circumscribed, localized, bilateral areas". This description is loose and may be misleading.

Clinical Record.

The present report concerns a man born in 1920. He was a reliable, conscientious worker with an oil company from 1934 to 1940 when he joined the R.A.A.F., rising to Squadron-Leader (Navigator) and serving in Egypt, Burma and India. He was awarded the D.F.C., and returned to his former employment after discharge from the service.

The first change was noted by his brother, who said that about Christmas, 1950, the patient was "more boisterous" than usual. In August, 1951, he was unable to concentrate at work, and in September talked incessantly about R.A.A.F. experiences. In December he was admitted to the Repatriation General Hospital at Springbank, South

Australia, where physical examination, except for exaggerated deep reflexes, revealed nothing abnormal. He was talkative, restless, excited and lacked insight; he was diagnosed as manic and given electroconvulsive therapy. This made him worse, and the diagnosis was changed to schizophrenia. He was given insulin coma therapy and discharged. He was soon readmitted to hospital; he had lost interest in his wife; he constantly repeated weak jokes, and was urinating in the garden. The results of the chest X-ray examination, air encephalogram and vision tests were normal. The Wassermann reaction was negative.

He was very troublesome in hospital, where he was given to pulling out fuses and spitting in the ward food. Accordingly, on June 20, 1952, he was certified to Enfield Receiving House and transferred to Northfield Mental Hospital.

In October, 1952, there was obvious personality deterioration with considerable restlessness, psychomotor hyperactivity and distractibility. He did not show manic flight of ideas, but poverty of thought, centred around fatuous anecdotes. Judgement was poor and he lacked insight. Orientation and memory were fairly correct. In October, 1953, he was childish, immature and fatuous, but not so hyperactive. Memory and orientation were fairly good. Concentration was marred by clichés and weak puns. He told anecdotes and facts without emotion or expecting a response from the interviewer, and was relieved when the interview finished. In January, 1954, there was marked deterioration with constant grimacing, grinning and protrusion of his dentures. He often ate cigarettes and nearly always chewed paper. His conversation was limited to "give me a light" and "give me a lolly", and he answered all questions with "yes" or "all right", despite their context. From this time he deteriorated rapidly, with depraved habits and weight loss, until a crop of boils and bronchopneumonia terminated his life on August 13, 1957, after an illness lasting a little under seven years.

Family History.

An elder brother is alive and well. His father was a postmaster who became restless and unable to concentrate about the time the patient was born. This was followed by an unruffled attitude to life in general and to a long period of unemployment. He finally returned to the postal service, but the work was performed by his wife, and he died in 1926, aged 56 years. He had never been in hospital, and he had not been seen by a psychiatrist. Pernicious anaemia is the only condition noted on the death certificate.

His mother died in 1952, and for a time prior to her death was said to be lazy and to neglect her home and herself. Pulmonary embolism is noted on her death certificate.

His paternal grandmother and grandfather each died aged 77 years of cerebral haemorrhage and heart failure respectively.

Autopsy Report.

Bone marrow films showed a normoblastic reaction. The lungs showed extensive broncho-pneumonia. In the brain there was well developed microgyria involving a considerable portion of the brain and especially the frontal regions. The brain was much smaller than normal due to symmetrical bilateral atrophy of the frontal lobes and both temporal poles. The midbrain, pons, cerebellum, parietal and occipital lobes appeared normal in size (Figure I). The leptomeninges over the atrophic areas were thickened, cloudy and opaque, and on stripping them, some decortication occurred, leaving the "walnutting" appearance classically described in Pick's atrophy. Posteriorly, the atrophic process was sharply limited by an apparently normal anterior central gyrus. Horizontal section through the hemispheres showed great wasting of the cortical white matter, with symmetrical dilatation of the anterior horns of the lateral ventricles. There was some reduction in the size of the basal ganglia, and the third ventricle was definitely dilated (Figure II).

Microscopic examination showed that in the affected regions there was marked disorganization of the cortical laminae with diffuse gliosis. There was marked atrophy

and pyknosis of the neurones. The white matter showed patchy loss of myelin in the affected areas.

Discussion.

Alzheimer and Binswanger (1894) demonstrated that patients with arteriosclerotic dementia could be differentiated from the large group of patients at that time labelled as having senile dementia. Alzheimer (1907) in

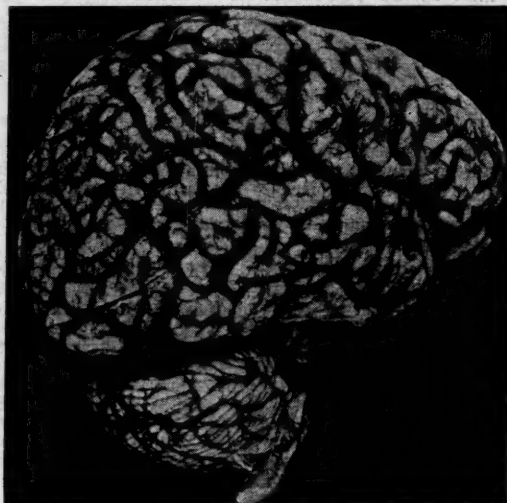


FIGURE I.

his now classic paper described a rapidly progressive psychosis with delusions, hallucinations and marked disorientation in a female aged 51 years, who progressed to complete degenerative dullness in four and a half years.



FIGURE II.

Histological study of the brain showed miliary sclerosis and marked changes in the intracellular neurofibrils. Pick (1892 to 1907) made four reports showing that in the large group of patients with what was termed senile dementia there were a few whose degenerative processes were found at autopsy to be based on localized atrophy of specific brain areas, and whose mental processes appeared to be characterized by severe aphasic-apraxic disturbances,

more pronounced than in true senile dementia. The brains of these people showed localized atrophy of the temporal lobes, but no mention was made of the frontal lobes, although he did note that the loss was of the association areas with preservation of the projection areas. Alzheimer (1911) described a case of circumscribed atrophy affecting the frontal lobes and termed it Pick's disease. Van Mansvelt (1954), in his review, listed 196 reported cases of Pick's disease and added two. He considered only 171 of the total reports as sufficiently authenticated. These 171 cases give a sex ratio of six females to five males. Schmitz and Meyer (1933), Sanders *et alii* (1939) and Löwenberg *et alii* (1939) demonstrated a familial tendency but so many isolated cases occur that a true heredo-degenerative causation is essentially unproven. The age group affected is between 40 and 60 years, with the peak between 50 and 60 years. No specific precipitating factor is known, but the age of onset in the familial cases appears to be fairly constant for that family. Schneider (1927) has divided the onset into two classes, the spontaneous-hypokinetic and the disinhibited-hyperkinetic, and the course into three stages: (i) disinhibition of morals and ethics; (ii) spontaneity, scanty speech and stereotypy; (iii) primitive reflexes and adverse movements.

The pathological findings are characteristic. To the naked eye there is a circumscribed atrophy of the cerebral cortex with variable localization, but affecting the association areas only, namely, the orbital surfaces, the poles and convexities of the frontal lobes, the middle and inferior temporal gyri and the anterior half of the superior temporal gyrus and the insula, and occasionally the parietal lobe and the oral parts of the caudate nucleus and putamen.

Macroscopically, there is disruption of the cortical laminae of the affected parts, especially the first, second and third, with some sparing of the fourth and some disruption of the fifth and sixth laminae. There is marked neuronal loss or pyknosis. Some reports describe occasional senile plaques and Alzheimer's fibrillary degeneration (Moyana, 1932). Others describe swollen nerve cells with argentophil inclusions (Bagh, 1940). Neuroglial proliferation is usual.

The variable histological picture is perhaps in part explainable by the work of Alexander and Looney (1938), who showed that though there was some dissimilarity of morphology compared with that of Alzheimer's fibrillary degeneration, the staining characteristics were identical (namely, hyperagentophilia) in many local and general diseases including death from cachectic states, paralysis agitans and after soaking human brain tissue in water or sodium chloride solution before fixation. They also showed by microincineration methods that in all these conditions and in Alzheimer's and Pick's disease the abnormal intracellular neurofibrils had a similar increased ash content compared to normal. This suggests that the histological features may be non-specific, and the diagnosis of Pick's cortical atrophy must be made on the history and the macroscopic appearance of circumscribed cortical atrophy, usually bilaterally symmetrical, affecting the association areas, sparing the projection areas, with wide sulci, some thickening of the overlying leptomeninges and compensatory dilatation of the ventricles.

Summary.

A case of Pick's atrophy of the brain is presented, demonstrating all the accepted classical features of the disinhibited hyperkinetic type progressing through the three stages of Schneider (disinhibition of morals and ethics; spontaneity, scanty speech and stereotypy; primitive reflexes and adverse movements), with loss of ideation but retention of memory and orientation, and showing the classical morphological distribution of circumscribed atrophy of the frontal and temporal association areas with preservation of the projection areas.

Acknowledgements.

I am indebted to Dr. H. M. Birch, Director General of Medical Services for South Australia, for permission to publish this case, to Dr. J. M. Dwyer for presenting the

specimen for study and to Professor J. S. Robertson and Dr. R. T. W. Reid for helpful criticism.

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Reviews.

Modern Treatment Yearbook 1958: A Yearbook of Diagnosis and Treatment for the General Practitioner. Edited by Sir Cecil Wakeley, Bt., K.B.E., C.B., LL.D., M.Ch., D.Sc., F.R.C.S., F.R.S.E., F.R.S.A., F.A.C.S., F.R.A.C.S.; 1958. London: Baillière, Tindall and Cox, Limited. 8½" x 5½", pp. 344, with nine illustrations. Price: 27s. 6d. (English).

This is a well-established Year Book designed to be of interest and value to the practising medical man. It covers a wide range of disorders and subjects of interest in medicine, surgery and obstetrics. The editor, Sir Cecil Wakeley, points out in his foreword that the various authors have chosen common diseases and conditions on which to write, and have discussed the modern treatment for these ailments. The present edition should sustain the popularity of this helpful book.

The Year Book of Drug Therapy. Edited by Harry Beckman, M.D.; 1957-1958 Series. Chicago: The Year Book Publishers. 7½" x 5¼", pp. 520, with illustrations. Price: \$7.50.

This is one of the most generally useful of the Year Book series, with an appeal to almost every practising medical man. This is so not only because drug therapy is an extremely important part of most medical practice, but also because of the enormous number of new drugs coming on the market, and the conflicting and often exaggerated claims that are made for them. The editor of this Year Book is well aware of these difficulties, and his conservative and critical approach is an extremely valuable feature of the book. The abstracts are grouped into chapters dealing with allergic disorders, cardio-vascular diseases, corticotropin and cortisone, dermatological maladies, diabetes mellitus, gastroenterological disorders, haematological disorders, hypothyroidism, infectious diseases and liver disorders, neoplastic

diseases, neuropsychiatric disorders, tranquillizers and stimulants, obesity, obstetric and gynaecological disorders, ophthalmological disorders, pain and fever, acute poisoning, rheumatic disorders, surgical disorders, thyrotoxicosis and worm infestation. The book is to be highly commended to all medical practitioners who wish to keep drug therapy in perspective.

The Medical Annual: A Year Book of Treatment and Practitioners' Index. Edited by Sir Henry Tidy, K.B.E., M.A., M.D., F.R.C.P., and R. Milnes Walker, M.S., F.R.C.S.; seventy-sixth year; 1958. Bristol: John Wright and Sons, Limited. 8½" x 5½", pp. 638, with illustrations. Price: 42s. (English).

This tried and proved annual has in its seventy-sixth appearance undergone a number of significant changes. Hitherto the articles have been arranged in alphabetical order, according to their individual titles, with the result that different reviews dealing with the same specialty have not necessarily been placed together. Now the review of the year's work in individual subjects has been arranged in a series of subsections, complete in themselves. These subsections, ranging in title from "Alimentary Diseases" to "Vital Statistics", contain all the reviews from the contributors who have dealt with the various specialties. This should make the volume more acceptable and easier for reference. In addition, four special articles are included, dealing respectively with intersexuality, wound infection in operating theatres, the dangers arising from the medical use of X rays, and the changing emphasis in paediatrics. As before, the editors' introduction provides a swift bird's-eye view of the medical and surgical fields, and the volume concludes with the customary practitioners' index to recent pharmaceutical and dietetic preparations, medical and surgical appliances, etc., as well as the list of books of the year. The number of annual reviews and similar publications has grown tremendously in recent years, but this annual retains its position.

The Year Book of Endocrinology (1957-1958 Year Book Series). Edited by Gilbert S. Gordan, M.D., Ph.D., F.A.C.P.; 1958. 7½" x 5", pp. 384, with illustrations. Price: \$7.50.

The editor of this Year Book has set out to cover the essential material in the current literature on endocrinology and does not necessarily deal with every pertinent field. A wide range of journals has been explored for this purpose, including a considerable number in languages other than English. A brief but helpful introduction by the editor evaluates the current literature. The abstracts which make up the volume are divided into sections dealing with general endocrinology, suprasellar influences, the adeno-hypophysis, the neurohypophysis and autometabolism, the thyroid gland, the parathyroid glands, calcium metabolism and metabolic bone diseases, carbohydrate metabolism, the adrenal medulla and the adrenal cortex, the reproductive system and endocrine influences on neoplastic diseases. The editor contributes a brief introduction to each of the main sections as well as an occasional annotation to an individual paper.

A.M.A. Scientific Exhibits, 1957. Sponsored by the Council on Scientific Assembly, American Medical Association; 1957. New York: Grune and Stratton, Incorporated. 10½" x 8", pp. 480, with illustrations. Price: \$15.00.

ACCORDING to a custom now established, the Council on Scientific Assembly of the American Medical Association has published this volume of scientific exhibits from its annual meeting, held at New York in 1957. It contains an outstanding collection from the four hundred exhibits presented. A great deal of time and thought and skill has gone into the preparation of these exhibits, which cover a wide field of all aspects of medicine and surgery. Apart from their medical value, they provide outstanding examples of visual education.

The Year Book of Obstetrics and Gynecology (1957-1958 Year Book Series). Edited by J. P. Greenhill, B.S., M.D., F.A.C.S., F.I.C.S. (Honorary); 1957. Chicago: The Year Book Publishers, Incorporated. 7½" x 5½", pp. 600, with 33 illustrations. Price: \$7.50.

J. P. GREENHILL has again produced a comprehensive collection of abstracts from the world's literature in this Year Book, which he has annotated freely and helpfully. The section on obstetrics is in four parts, the first of which deals with pregnancy under the headings of physiology, abortion, ectopic pregnancy, complications and the toxemias. The second part is concerned with labour, and is subdivided into chapters on general topics, analgesia and anaesthesia,

complications, operative obstetrics and uterine haemorrhage. The other two parts deal with the puerperium and the newborn. The section on gynecology is subdivided into parts dealing with general principles and diagnosis, infertility, operative gynecology, infections, non-malignant neoplasms, malignant tumours, menstrual disorders and endocrinology. A specially contributed article by L. B. Russell discusses genetic considerations in the practice of ovarian irradiation for the treatment of sterility.

The Year Book of Medicine (1957-1958 Year Book Series). Edited by Paul B. Beeson, M.D., Carl Muschenheim, M.D., William B. Castle, M.D., Tinsley R. Harrison, M.D., Franz J. Ingelfinger, M.D., and Philip K. Bondy, M.D.; 1957. Chicago: The Year Book Publishers, Incorporated. 7½" x 5", pp. 752, with 128 illustrations. Price: \$7.50.

A VAST AMOUNT of information is packed into this volume, which continues to provide a valuable guide to those who are anxious to keep up with medical literature. There is a minimum of editorial comment, but the eminence of the respective editors of the six sections is some guarantee of the value of the material they have selected. This volume should be in the hands of all physicians and others who are interested in modern medicine.

The Year Book of Pediatrics (1957-1958 Year Book Series). Edited by Sydney S. Gellis, M.D.; 1957. Chicago: The Year Book Publishers, Incorporated. 7½" x 5½", pp. 472, with 153 illustrations. Price: \$7.50.

THIS Year Book has chapters on the premature and the newborn, nutrition and metabolism, infectious disease and immunity, allergy and dermatology, dentistry and oto-laryngology, ophthalmology, the respiratory tract, the gastrointestinal tract, the genito-urinary tract, the heart and blood vessels, blood, endocrinology, orthopaedics, urology and psychiatry, tumours, therapeutics and toxicology, and miscellaneous subjects. The annotations to the individual abstracts are of particular interest, as the editor has adopted the policy in many cases of referring the abstracts for comment to people particularly well informed in the field concerned. There will be few medical practitioners who do not find something of practical interest in this volume.

Books Received.

[The mention of a book in this column does not imply that no review will appear in a subsequent issue.]

"Basic Surgery", edited by Leslie Oliver, M.B., B.S., F.R.C.S., F.A.C.S.; 1958. London: H. K. Lewis and Company, Limited. 9½" x 6½", pp. 1376, with 680 illustrations (including four coloured plates). Price: £6 6s. (English).

"This book has been written primarily for undergraduate students by a team of writers with special experience of their subjects."

"A Bibliography of Internal Medicine: Communicable Diseases", by Arthur L. Bloomfield, M.D.; 1958. Illinois: The University of Chicago Press. 9½" x 6", pp. 568. Price: \$10.00.

An annotated bibliography, historical as well as current, of 31 communicable diseases. The compiler has been selective, but has tried to include every reference of fundamental importance.

"Diseases of the Nervous System: Described for Practitioners and Students", by Sir Francis Walshe, M.D., D.Sc., F.R.S., with chapters on "The Neurological Complications of Liver Disease" and "Hepatolenticular Degeneration", by J. M. Walshe, M.R.C.P.; 1958. Ninth Edition. Edinburgh and London: E. and S. Livingstone, Limited. 9½" x 5½", pp. 392, with 60 illustrations. Price: 30s. (English).

This work, which first appeared in 1940, has been fully revised since the previous edition was published in 1955.

"Practical Clinical Biochemistry", by Harold Varley, M.Sc., F.R.I.C.; Second Edition; 1958. London: William Heinemann (Medical Books), Limited. 8½" x 5½", pp. 643, with many illustrations. Price: 42s. (English).

Intended particularly to appeal to "registrars training in clinical pathology, to hospital biochemists, and to laboratory technicians". It has been fully revised.

The Medical Journal of Australia

SATURDAY, DECEMBER 27, 1958.

"STANDS SCOTLAND WHERE IT DID?"

SCOTLAND is a great country for exporting, as most of the world knows. Four of the best known of its exports are tweeds, libellous jokes about Aberdonians, whisky and Scotsmen. The quality of the first is uniformly high, of the second uniformly low, of the third a matter of taste, and of the fourth a matter of opinion. It is this fourth that concerns us just now. Francis Lockier once wrote that in all his travels he "never met with any one Scotchman but what was a man of sense"; he believed that everybody of that country that had any sense left it as fast as he could. Your true Scot would, of course, reject this belief, which is certainly a cynical over-statement, but it is not without its point. The Highlands have been emptying into the Lowlands for two centuries now, and many "hardy sons of rustic toil" have taken the further step and turned from stern Mother Scotland to the lands of opportunity over the seas. Not that there has been any loss of affection for the homeland—no more ruggedly loyal exile is to be found on the face of the earth than the Scot; but where he has gone he has made his home and played his part. J. M. Barrie spoke only the truth when, during his Rectorial Address in 1922, he told the undergraduates of St. Andrews that they came of "a race of men the very wind of whose name has swept the ultimate seas".

Australia certainly has felt the impact of its Scottish immigrants, who have stimulated enterprise and provided leadership in many spheres. It is probably no coincidence that much of the land and influence in inland Australia is in the hands of Scots and their descendants, and Australian medicine owes much to them. We have been reminded of this in the past year by the celebration of the seventy-fifth anniversary of the foundation of the Medical School in the University of Sydney in March, 1883. The roots of this school are in Edinburgh, and in the Edinburgh tradition it has grown. Its founder, Thomas Peter Anderson Stuart, came to it in 1883 from an Edinburgh which had at that time, in the words of Sir Charles Bickerton Blackburn,¹ "the most notable and best equipped medical school in the British Empire". On arrival in Sydney he found himself sharing an as yet not quite completed four-roomed cottage with the Professor of Natural Philosophy. From this small beginning he proceeded to build a faculty that has long stood in honour among the medical schools of the world. Moreover, as S. H. Lovell² has pointed out, he was intimately associated with the Faculty of Dentistry, the Dental Hospital and the

Pharmacy Department, and his name has been coupled with that of Sir Alfred Roberts as the most outstanding in the history of the Royal Prince Alfred Hospital. Sir Charles Blackburn comments:

It is unlikely that any one man will ever again have the ability or the opportunity to supervise and fashion over so many years a medical school of his own creation as did Anderson Stuart. As Dean he dominated the Faculty and sitting as its representative he was able to keep its needs constantly before the Senate and when in 1901 he became Chairman of the Board of the Royal Prince Alfred Hospital he virtually achieved the control of the policy and administration of the official clinical training ground of his students. Now personally controlling not only the preclinical but also the clinical training, he was in an ideal position to achieve the high standard for which he had been working, and when he died in 1920 he knew that graduates of his school were accepted as on a par with those of any medical school in the Empire.

Closely associated with Anderson Stuart from the beginning was Alexander MacCormick, another Edinburgh man, who was later to become famous as a surgeon. From Edinburgh also came three more who made a major contribution to the young school: Robert Scot Skirving, formerly a fellow student with Anderson Stuart, who was one of our greatest clinical teachers; J. T. Wilson, who was appointed Professor of Anatomy when a separate department was created in 1890 and remained to mould the department until he took the chair of anatomy at Cambridge in 1920; D. A. Welsh, who endeared himself to generations of students during the more than thirty years for which he occupied the chair of pathology from its foundation in 1902.

These were the men, Edinburgh graduates all, who founded and shaped Australia's largest medical school, and its oldest but one. What was the rock whence they were hewn? How was it and how is it with their Scotland and its medical tradition? Certain it is that nothing in their record allows for some of the bitter gibes that have been cast at Scotland; and the long story of Scottish medicine, which has been retold recently in brief compass by Ian D. Pennie,³ contains much of which to be proud. Ignorance and superstition, fault and failure there certainly were, but in this respect Scottish medicine is not unique or even unusual. The story of medicine in every country is one of slow upward struggle against all manner of obstacles, and it must be said that Scottish doctors have brought great contributions to the teaching, practice and understanding of it. If we think with Samuel Johnson that the Highlanders and their Gaelic were only crude and barbaric, we may be surprised to learn from Pennie that, as far back as the beginning of the fifteenth century, the traditionally medical family of the Macbeaths was using Gaelic translations of medical manuscripts from early Greek philosophers and physicians, from the Arabian school and from the medical schools of Salerno and Montpellier. It seems likely that the early Scottish medical schools were more influenced by the important teaching centres on the Continent than were their English contemporaries; and when the Faculty of Medicine was founded in the University of Edinburgh in 1726, as the result of the combined activity of the medical profession and the Town Council, it was deeply under the influence of the great medical school of the University of Leyden and its outstanding teacher

¹ *Sydney Univ. M. J.*, 1958, 48: 15.

² *Sydney Univ. M. J.*, 1933, 27: 61.

³ *Scottish M. J.*, 1958, 3: 398 (September).

Boerhaave. In the succeeding two centuries not only did it produce men of the calibre of James Young Simpson and Joseph Lister, whose contributions to medicine can never be forgotten and perhaps never surpassed, but it gave freely of its medical heritage to the world. This was well recounted, without boasting and with due homage to the legacy of preceding ages and of other countries, by the Dean of the Faculty of Divinity in a sermon¹ preached on the occasion of the Bicentenary of the Faculty of Medicine in Edinburgh in 1926:

During these two bygone centuries the Medical Faculty has trained and sent forth over 16,000 graduates of whom only some two-thirds were of Scottish birth, the rest being drawn from some sixty different nationalities; and these have not only supplied the needs of Scotland, but they have occupied every English county, penetrated London equally in Stepney, in Holloway, and in Harley Street, and placed their knowledge and skill at the service of every considerable city of our world-wide and many-coloured Empire, and far beyond its borders. It may be that in the future the university will fill a less conspicuous rôle as an imperial and cosmopolitan institution, but if so it will be largely attributable to the fact that in provincial towns in England, and in the dominions overseas, there has sprung up a multitude of medical schools, made in her own image, which the University of Edinburgh supplied with many of their teachers, and did her best to qualify as her own competitors in the service of humanity.

Professor D. A. Welsh² also has recorded that when he began the study of medicine in Edinburgh towards the end of last century, there were about 400 students in his year, from all quarters of the earth and even from London, "so compelling was the fame of the great teachers of medicine in Edinburgh in those days". His further comment is characteristic: "Then Edinburgh led the English-speaking world in trying to realize the true ideals of medicine through her practical teaching, and the success of that teaching was due to the fact that it was based on pathology. The tradition of the Edinburgh Medical School was—and is—that every teacher must be a pathologist first and a physician or surgeon afterwards."

We have said nothing here of the other medical schools of Scotland—Aberdeen, Glasgow, St. Andrews—not because they should or could fairly be underrated, but because of our own close ties with Edinburgh. All these schools have made and are still making their contribution to the great name of Scottish medicine. Scotland has had its problems in recent years, but we need have no fear of disillusionment if we dare to echo today Macduff's anxious question: "Stands Scotland where it did?" For medicine we may answer that Scotland is still producing great doctors and great teachers, and that Australians with those of many other countries are still happy to sit at their feet. Looking more widely, as the old year passes into the new, and the Scots celebrate the season that they have made peculiarly their own, we may reply confidently, applying to all the plaided warriors of the north the words that Moray McLaren³ has written of the Lowlander:

So he survives, endures, and impresses, and is likely to continue to do so for a long time. For the most part of a millennium he has survived the weather, the poverty of his land, and the English. He is unlikely to give in easily now.

¹ "University of Edinburgh: Bicentenary of the Faculty of Medicine, 1726-1926: Records of the Celebration", 1926, James Thin, Edinburgh: 62.

² *Sydney Univ. M. J.*, 1933, 27: 97.

³ "The Scots", 1951, Penguin Books: 76.

Current Comment.

COMPLICATIONS OF BURNS.

THE complications of burns are many and various. J. A. Moncrief⁴ has compiled a formidable list encountered in the management of 1000 cases of burns and described what was done about them. Burns of the ears with chondritis were treated by excision of all non-viable and infected cartilage. When ectropion occurred, surgical intervention was delayed to allow scar tissue maturation to occur, unless danger to vision existed, in which case tarsorrhaphy and over-correction with split-skin grafting were carried out. Full-thickness skin loss was rarely encountered in the palm of the hand, but was frequent on the dorsum, where functional loss commonly occurred. Destruction of the central slip of the extensor tendon over the proximal interphalangeal joint was treated by fusion of the joint in 30° to 40° of flexion by the insertion of Kirschner wires. Ischemia associated with circumferential third degree burns of the extremities was met by wide splitting of the eschar. When deep burns involved bone, it was considered that the surgeon should wait until it was clear that granulation tissue would not form; when that was evident, numerous holes were drilled in the cortical bone or it was removed by a chisel; when granulations had formed from the marrow cavity, skin cover might be provided. Neurological complications were most often due to localized deep third degree burns or to compressive dressings. The majority of genito-urinary complications resulted from infection from indwelling catheters or recumbency calculus. Homologous serum jaundice was attributed to blood and plasma in approximately equal numbers of cases; general anaesthesia and major surgery were contraindicated until recovery had occurred. Curling's ulcer, paralytic ileus associated with septicæmia, and acute dilatation of the stomach were other gastro-intestinal complications encountered. Acute renal insufficiency occurred only when resuscitation was inadequate. Joint stiffness was the result of prolonged immobilization. Moncrief states that when a tendon is partially destroyed, the blood supply is likely to be tenuous, and infection will result in a spreading necrosis. After a burn it usually takes from 12 to 18 months for scar tissue to mature; soft tissue contracture is treated after this interval by surgical excision and skin grafting; early treatment is usually followed by rapid recurrence of the contracture. Wound infection may convert donor sites and second degree burns to full thickness skin loss, and its control is therefore vital. For small electrical burns overlying important structures such as flexor tendons in the hand, it is better to excise the area early, and watch the wound carefully for several days to determine whether further débridement is necessary. The immediate treatment of a phosphorus burn is the application of a saturated copper sulphate solution and removal of all fragments of phosphorus.

The greatest problem associated with the management of burns is undoubtedly infection, particularly when it is manifest as septicæmia. J. A. Moncrief and J. A. Rivera⁵ state that the hemolytic *Staphylococcus aureus* is the microorganism most often isolated from the blood in such cases, with *Proteus* and *Pseudomonas* next in frequency. The β -hemolytic streptococcus, although of no great significance in septicæmia when penicillin is given prophylactically, is the primary cause of graft loss. It is considered that the burn surface is the source of the contamination of the blood-stream, and patients with septicæmia rarely respond to therapy unless their burn wound has been covered with autograft or homograft skin. Penicillin, frequently combined with streptomycin, was used by Moncrief and Rivera both prophylactically and for the treatment of streptococcal infections. Chloramphenicol, bacitracin, erythromycin, polymixin and the tetracycline

⁴ *Ann. Surg.*, April, 1958.

⁵ *Ann. Surg.*, March, 1958.

drugs were reserved for patients with blood-stream invasion. Chloramphenicol, bacitracin and novobiocin are regarded as the drugs of choice for use against *Staphylococcus aureus*, but resistance develops rapidly. *Proteus* is usually sensitive to chloramphenicol, though resistant to other drugs, and rarely develops resistance to this drug. Polymixin is almost always effective against *Pseudomonas*, and resistance does not develop. Bacitracin is more difficult; one must weigh the possible toxicity against its possible benefit.

ROLE OF LYMPHATICS IN INTERSTITIAL CYSTITIS.

INTERSTITIAL CYSTITIS (so-called Hunner's ulcer) has been notoriously resistant to many forms of treatment. However, L. W. Riba¹ points out that Hunner himself as early as 1915 reported that all patients with this rare bladder ulcer had chronic granular urethritis. Riba goes on to refer to the work of T. O. Powell, of Los Angeles, on the vesical lymphatics. Adequate drainage through these lymphatics may be interfered with by long-standing urethritis, periurethritis and other adjacent infections. Powell noticed the similarity between Hunner's classical description of chronic inflammation, oedematous thickening, increase in connective tissue and epithelial loss, and the microscopic picture of progressive lymphatic oedema. Riba found that 10 out of his 11 patients with interstitial cystitis had thickened, palpable Skene's ducts, while in all the urethra was thickened and/or tender. Other urological and gynaecological lesions were occasionally found and corrected, but the main attack was against the urethral inflammation. In this condition the urine is usually not infected, but the bladder is intolerant of distension owing to the interstitial inflammation which spreads to the muscle layers. The hyperaemic area of the bladder wall was lightly coagulated in all cases, but urethral lesions were all properly treated, usually by coagulation and often by endoscopic resection. Infected Skene's ducts were properly opened. Biopsies of urethral tissue removed all showed a similar appearance—dilated blood vessels, oedema, fibrosis, lymphatic aggregates and muscular hypertrophy. In the follow-up it was noted that nine of the eleven patients were relieved of bladder pain for periods of two to eight years. In most, however, increased frequency of micturition persisted on account of fibrosis of the bladder wall. In six, the ulcerated or hyperaemic portion of the bladder wall had disappeared, while in four the ulcers appeared to be inactive. In the remaining case no check cystoscopic examination was made.

THE CYTOLOGICAL DIAGNOSIS OF CANCER IN NEW ZEALAND.

THE cytological diagnosis of cancer, as the detection of cancer by means of the examination of cytological smears has come to be known, is a subject of growing interest and importance, especially with reference to carcinoma of the uterus. It is therefore interesting to note what is being done in this field by our colleagues on the other side of the Tasman sea. In a recent article,² H. M. Carey and S. E. Williams, writing from the Post-Graduate School of Obstetrics and Gynaecology in Auckland, discuss the cytological diagnosis of pre-clinical carcinoma of the cervix as this applies in New Zealand. After presenting the usual statistics to illustrate the vital importance of early diagnosis (the latest available statistics show that both in Australia and in New Zealand about 60% of cancers of the cervix have already progressed beyond clinical stage I when first examined), they comment that, although cytological diagnosis has been used widely in America for the last ten years, its widespread adoption elsewhere has been slow, mainly owing to the specialized experience required for the interpretation of cytological

smears and to the facilities needed for processing them. They state that in New Zealand this state of affairs has been rectified and that cytological processing and reporting facilities are now available to every doctor in the country.

Carey and Williams discuss the results of three years' work at Auckland. Of the three types of smear commonly employed in cytological examinations for carcinoma of the cervix (vaginal pool smear from the posterior fornix, cervical smear from the squamo-columnar junction, and endocervical smear), they have employed the cervical smear as a routine, as they consider this the most reliable. Examination of the smears has been largely carried out by two specially trained senior technicians, who screen 10 to 30 slides daily, in addition to other duties. All "positive" and doubtful smears are referred to the pathologist in charge, who issues the final report. All patients with a report of positive or suspicious findings are admitted to hospital for ring or cone biopsy, and the histological examinations are carried out independently of the cytological unit. Biopsy specimens are sectioned serially, five to twenty blocks being sectioned in each case.

During the three years under review, smears have been examined from almost twenty thousand women over the age of 30 years, who had no clinical evidence of carcinoma. Nearly half of these were from patients attending the clinics of the National Women's Hospital, Auckland, where smears were taken from all patients over the age of 30 years attending the gynaecological clinic, and latterly from all women over the age of 30 years attending the obstetrical clinic. The other half were smears sent in by practitioners working outside the hospital, mainly in the Auckland area. These included a proportion of smears from women who had consulted their private practitioner for a routine "check up" as a result of cancer publicity conducted by the local branch of the British Empire Cancer Campaign Society.

As a result of these examinations, 20 cases of unsuspected early invasive carcinoma were discovered, and 47 cases of carcinoma-in-situ. This gives an over-all incidence of "surprise positive" cases (defined as those in which, on clinical examinations, the appearance of the cervix has not aroused sufficient suspicion of carcinoma in the mind of the clinician to warrant his referring the patient for biopsy) of 3.3 per 1000. The incidence of "surprise positive" cases among patients attending the gynaecological clinic was 2.4 per 1000; that among patients examined by outside practitioners was 4.2 per 1000.

The incidence of carcinoma of the cervix diagnosed by cytological methods in surveys made in Britain and North America is very variable, partly no doubt because the scope of no two surveys is exactly comparable, and partly because the true incidence of the disease varies in different races and different populations. The New Zealand figures are lower than those obtained in most North American surveys, and there is evidence that the incidence of carcinoma of the cervix in New Zealand is about half that found in North America. Finally, the New Zealand authors have calculated that the cost of the laboratory services involved works out at about £100 for each "surprise positive" case discovered. Assuming that the cure rate in such cases should be almost 100%, and knowing that the five-year survival rate for carcinoma of the cervix has in the recent past been only about 40%, they conclude that the laboratory cost of saving a life in these circumstances is £170. This calculation of cost may seem somewhat irrelevant; nevertheless, it is important to have some idea of the cost involved in providing a service for which there is likely to be a growing demand, and which may eventually become as generally accepted a part of preventive medicine as mass X-ray surveys are now. Carey and Williams consider that the evidence from the literature indicates that a cervical smear should be taken routinely at least once in every five years and preferably once every two years from every woman between the ages of 30 and 70 years. Others have made similar suggestions, but such a far-reaching proposal raises issues other than mere cost, and it is likely to be some time before the necessity for it will gain general acceptance.

¹ J. Urol., June, 1958.

² New Zealand M. J., 1958, 57: 227 (June).

Abstracts from Medical Literature.

SURGERY.

Arterial Repair During the Korean War.

C. W. HUGHES (*Ann. Surg.*, April, 1958) states that a review of the literature shows some duplication in the reporting of blood vessel repairs in the Korean War, and after communicating with the individual investigators attempts to make an accurate statistical study. Of 304 injured major vessels involved, 269 were repaired and 35 ligated. The amputation rate for patients who had vessels repaired by suture was 13% (compared with 36% in World War II), and was 51% for those in whom major arteries were ligated. An evaluation of methods of repair of severed arteries showed that best results were obtained after anastomosis, next best by autogenous vein graft, and poorest by artery homograft.

Results in Primary Repair of Arterial Injuries.

E. J. JAHNKE, JUNIOR (*Surgery*, February, 1958) reports follow-up studies of 115 patients who had arterial repairs performed in Korea without the loss of a limb. By arteriography, late thrombosis was found to have occurred in 33 of the patients, but in no instance was amputation required. Thrombosis had occurred in 19% of direct anastomoses, in 45% of lateral repairs, in 47% of autogenous vein grafts, and in 70% of homologous artery grafts. In 64% of the patients with thromboses, no cause could be found for the failure. The factors which could be implicated in the others were tension and constriction at the suture line, infection, secondary hemorrhage, and the use of a damaged vein as a graft. It was not possible to correlate time lag, wound size, wound location, and associated bone and nerve injury with the incidence of thrombosis. After thrombosis of the repaired vessel, symptoms of insufficiency were almost entirely limited to patients with lesions in the lower extremity. Eight patients with such symptoms had arterial continuity restored by a secondary grafting procedure with excellent results.

Synthetic Arterial Substitutes.

E. S. CRAWFORD, M. E. DE BAKEY AND D. A. COOLEY (*Arch. Surg.*, February, 1958) review the case of synthetic arterial substitutes in the light of experience in 317 patients submitted to vascular surgery. The authors state that arterial homografts have been generally accepted as the most satisfactory arterial substitute, their primary disadvantages being the scarcity of such material and the inconvenience of preparing it. Efforts towards solving the problem of graft procurement have been directed more and more toward development of a suitable synthetic replacement. The authors consider that the recently-devised knitted "Dacron" tube incorporates the desirable characteristics of all other available substitutes, and that with the addition of accessory branches a complete range of adaptability

may be obtained. They found that they had no graft failures or complications attributable to the use of this material in their last 237 cases. Normal circulation was restored in all the patients with aortic lesions and with peripheral arterial aneurysms who survived operation, and in 95% of those with occlusive disease of the peripheral arteries. As a result of this experience they state that it is possible to apply knitted "Dacron" tubes to virtually all segments of the aorta and peripheral arteries, including those requiring multiple branches such as the aortic arch and the upper abdominal aorta.

Experimental Nylon Aortic Substitutes.

W. O. BARNETT AND T. D. NORMAN (*Arch. Surg.*, March, 1958) report an histological study of the tissues surrounding experimental nylon aortic substitutes. They found that these are enveloped by a fibrous sheath which is laid down by the host. The new vascular conduit is lined by endothelium. The sheath is composed for the most part of reticular fibres of connective tissue, and no elastic fibres were found. There were occasional foci of fibrinoid necrosis and inflammation disrupting the continuity of the inner lining sheath. Arteriosclerotic plaques were present in the adjacent aorta, but none was found in the synthetic material. The authors state that, unlike aortic homografts in synthetic prostheses, calcification was not found as a late degenerative change.

Superior Vena Caval Replacement.

A. RIBERI AND T. C. MOORE (*Arch. Surg.*, March, 1958) report experiments in which endothelium lined tubes made from free segments of pericardium were employed in experimental superior vena caval replacement in 12 dogs. There was no operative mortality. The immediate results appeared to be excellent with respect to both appearance and function, but thrombus formation led to total occlusion of the grafts in all 12 animals. The authors consider that these findings show the unsuitability of free tubes of autogenous pericardium as superior vena caval replacements.

Hazards of Arteriography.

P. H. KLINGEBERG (*Arch. Surg.*, January, 1958) points out that during arteriography, though complications are infrequent, occasional serious sequelae including death may occur. In this article he reviews the records of 47 patients submitted to arteriography and 16 to peripheral arteriography, and reports three significant complications. He therefore considers that aortography should be undertaken only when the proper indications are present. Among the complications observed were: (i) An episode of acute renal failure due to tubular necrosis after the rapid injection of concentrated dye into the aortic lumen, which had an arteriosclerotic obstruction below the renal vessels. Most of the dye entered the renal arteries. After a ten-day period of acute uremia with oliguria, the patient recovered completely. (ii) Segmental gangrene of a portion of the thigh after femoral arteriography,

apparently due to involvement of the lateral circumflex femoral artery. (iii) Cardiac arrest due to laryngospasm during "Pentothal" anesthesia. (iv) Extravasation of the dye, which the author states to be usually innocuous. (v) Thrombosis of the femoral artery, due to arteriosclerotic occlusion of the aorta and both common iliac arteries. (vi) A case in which a large dose of dye was injected into the right renal artery with temporary loss of the function of that kidney.

J. E. ANTHONY, JUNIOR (*Arch. Surg.*, January, 1958) states that translumbar aortography is of value as a diagnostic procedure, but only as an adjunct to simpler, safer, and more revealing studies. In a series of 100 aortograms the author reports six cases of untoward reactions to translumbar aortography. These included paraplegia, perirenal abscess, retroperitoneal hemorrhage, chemical pyelonephritis, and extravasation of dye causing severe pain.

By-Pass Grafts in the Treatment of Occlusive Arterial Disease.

R. A. DETTERLING, JUNIOR (*Arch. Surg.*, February, 1958) discusses his experience with by-pass grafts in the treatment of occlusive arterial disease. Because of discouraging clinical results in the treatment of occlusive peripheral arterial disease by excision and end-to-end graft replacement, the author has employed by-pass shunts of homologous artery or woven "Dacron" in 65 patients with occlusion of the aorta or peripheral arteries. In the case of femoral arterial grafts, the use of by-pass grafts has resulted in an occlusion rate one-half of that experienced when using end-to-end grafts.

Internal Carotid Artery Thrombosis.

B. ROBERTS, G. PESKIN AND F. WOOD (*Arch. Surg.*, April, 1958) state that thrombosis and stenosis of the internal carotid artery is a far more common occurrence than is generally realized. It should be considered in the differential diagnosis of all cerebral vascular accidents and any progressive intracranial disease. The condition is usually found in men in late middle age. Diagnostic measures include palpation of the carotid pulse, the observation of the arterial pressure in the retinal vessels, and carotid angiography. They present four cases of exploration of the internal carotid artery, but in only one of these cases was the operation undertaken within 36 hours of the development of the occlusion, and in this patient only was there significant neurological improvement after operation. Thus they consider that this condition can be relieved surgically in a high proportion of cases, if the diagnosis is made promptly.

Ischemia of the Colon after Excision of Aortic Aneurysms.

J. MCKAIN AND H. B. SHUMACKER, JUNIOR (*Arch. Surg.*, March, 1958) report two cases of ischemia of the descending colon following excision of an arteriosclerotic aneurysm of the aorta. In one case the patient sustained a stricture associated with chronic non-specific ulceration necessitating resection. In the other

case the patient died from gangrene of the distal part of the colon due to thrombosis in the mesenteric vessels. The authors point out that although it is true that the inferior mesenteric artery can generally be divided without fear as far as the colon is concerned, there is a small risk involved, especially if it is also necessary to ligate one or both hypogastric arteries, or when generalized severe arteriosclerosis jeopardizes the maintenance of blood flow through the collateral vessels. After removal of an abdominal aortic aneurysm, the occurrence of diarrhoea, or troublesome hypotension, or the presence of blood-stained abdominal fluid during the post-operative period, suggests that ischaemia of the left side of the colon may have occurred. The area of the descending colon in which a stricture may develop as a result of this ischaemia corresponds roughly to the critical point of Sudeck.

Multiple Peripheral Arterial Emboli.

W. C. MCGARITY AND W. D. LOGAN, JUNIOR (*Surgery*, February, 1958) point out that any arterial embolus may be one of a series, or one of several emboli occurring simultaneously, because an embolus is a secondary lesion due to primary disease elsewhere. In this series of 64 patients one-third of those surviving the first embolus had another within a relatively short time. Of a total of 19 secondary or subsequent emboli, 17 occurred within one year of the first. The authors found no significant differences in age or aetiology in patients with multiple emboli as compared with those having only one embolus. They consider that prophylactic anticoagulant therapy seems to be of definite value in reducing the likelihood of recurring emboli.

Arterial Embolism During Heparin Therapy.

R. E. WEISMANN AND R. W. TOBIN (*Arch. Surg.*, February, 1958) state that during recent years they have observed and treated an increasing number of patients who have suffered major arterial embolism whilst on active systemic heparin therapy. They describe 10 cases in which one or more arterial emboli occurred during the systemic use of heparin in therapeutic doses. All these patients were treated by embolectomy. Clinical and autopsy studies of this group suggested that all patients had occult friable aortic thrombi, in various states of unstable organization, which were not suspected prior to the sudden dramatic peripheral occlusion.

Femoral Catheters.

J. A. MONCRIEF (*Ann. Surg.*, February, 1958) describes the complications encountered in the intravenous use of femoral polyethylene catheters at the United States Army Surgical Research Unit. Since early 1954 these catheters were used in 135 instances on 15 patients suffering from renal insufficiency from various causes and on 76 patients with extensive burns. They were left in place from one to 51 days. The location of the tubing at autopsy was interesting; the tips of the catheters were observed distally, within the homolateral and contralateral hypogastric veins, the contra-

lateral common iliac, and at varying points in the inferior vena cava. In three patients portions of the polyethylene tubing were inadvertently left within the body. One of these patients is still alive and has no symptoms two years later. The other two died of septic thrombophlebitis attributed to the retention of the tubing. Thrombosis appeared to be the most frequent and serious complication; four patients developed an extensive septic thrombophlebitis which was undoubtedly the direct cause of death. The incidence of the various complications observed is considered to be a minimal rather than an average incidence, as it is likely that many complications escaped detection. It is concluded that femoral catheters should be used only when all other methods of intravenous infusion have been exhausted, and when used should remain in a single femoral location for not more than seven to 10 days.

"Saddle" Embolus Causing Multiple Emboli.

R. E. WEISMANN AND W. J. ELLSWORTH, JUNIOR (*Ann. Surg.*, January, 1958) describe two cases in which a "saddle" embolus necessitated multiple aortic and peripheral embolectomies. They stress that persistent or progressive symptoms and signs of acute peripheral arterial occlusion must be recognized as soon as possible after aortic bifurcation embolectomy, since distal occlusion may be due to multiple emboli or fragments of the original "saddle" embolus. Peripheral embolectomy can be done with little additional risk under local anaesthesia without interrupting anticoagulant therapy.

The Solitary Pulmonary Nodule.

R. R. TAYLOR, L. N. RIVKIN AND J. M. SALTER (*Ann. Surg.*, February, 1958) review 236 consecutive cases of clinically undiagnosed solitary intrapulmonary lesions, varying in diameter from one to six centimetres on the X ray film, in which operation was performed. The patient with an undiagnosed solitary intrapulmonary nodule has about three out of four chances of having a granuloma and a one in 10 chance of having a malignant tumour. If all patients with any calcification or lamination of the nodule are excluded, the chance of malignancy increases to one in eight. If the lesion does not have sharp distinct borders, yet appears as a nodule, the risk of malignancy increases to one in two.

Adult Intussusception and Carcinoma of the Colon.

G. B. SANDERS AND W. H. HAGAN (*Ann. Surg.*, June, 1958) state that 1252 cases of acute intussusception in adults have been reported in the English and American literature since 1892, including the four cases presented in this paper. In 95% of intussusceptions occurring in children, no cause can be found, whereas 80% of intussusceptions in adults are due to some specific organic lesion. Adult intussusceptions involving the colon and rectum are due to carcinoma in 62% of cases. Because of the high association with malignancy, adult intus-

susceptions, especially those of the large bowel, are preferably treated by radical resections according to the strict requirements of adequate cancer surgery. Conservative surgical measures, applicable in children, are unwise in the adult.

Post-Operative Small Bowel Dyskinesia.

I. S. GOLDENBERG AND M. A. HAYES (*Ann. Surg.*, January, 1958) describe an abnormal post-operative bowel recovery phase occurring in nine out of 96 patients treated by operation for benign small bowel obstruction at the Yale-New Haven Medical Center. Abdominal distension of some magnitude was present in spite of normal audible peristalsis, daily bowel actions, and normal appetite and ingestion of food. X-ray films of the abdomen revealed distended loops of small bowel like those seen in mechanical obstruction or ileus. Treatment by long tube intubation, drugs etc. is unnecessary, as the condition is self-limited.

Villous Adenoma of the Large Intestine.

M. W. WHEAT AND L. V. ACKERMAN (*Ann. Surg.*, April, 1958) review 50 cases of villous adenoma of the large intestine. This is a tumour predominantly of the rectum and recto-sigmoid region, which occurs in people of either sex, usually past the age of 50 years, and frequently past 60 years. The commonest symptoms are the passage of blood and mucus from the rectum and/or loose watery stools. The presence of a tumour can be detected in most instances by simple rectal examination or by sigmoidoscopy. Biopsy specimens may be characteristic of the villous adenoma, but there is a 25% chance that the most malignant zone may be missed. Also in one-third of the patients examined another tumour of the bowel, either benign or malignant, will be present. Twenty-nine patients were treated by adequate local excision, and in this group there were two deaths in the post-operative period; of the remaining 27 patients, 13 are alive without evidence of disease after periods of less than five years, and 14 are alive without evidence of disease for more than five years. Treatment of these tumours by inadequate local excision most often leads to repeated local recurrences and eventually to the death of the patient. Irradiation therapy of any type has no place in the treatment of these tumours.

Mitral Stenosis and Gall-Stones.

F. GLENN AND S. F. REDO (*Ann. Surg.*, June, 1958) state that women between the ages of 26 and 45 years make up the greater proportion of most reported series of patients who have been operated upon for mitral stenosis. They have found an unusually high incidence of gall-stones in this group of patients. Many of them have had episodes of acute cholecystitis in the immediate post-operative period following valvulotomy. This has led the authors to adopt a policy of examining the biliary tract in all patients being considered for mitral valvulotomy, and, when indicated, of attacking the biliary tract disease first unless the indications for surgical correction of the mitral stenosis are more urgent.

British Medical Association.

NEW SOUTH WALES BRANCH: SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on April 17, 1958, at the Royal North Shore Hospital of Sydney, Crows Nest. The meeting took the form of a series of clinical demonstrations by members of the honorary staff of the hospital.

Congenital Abnormality of the Kidneys.

DR. R. D. PUFLETT showed a male patient, aged 18 years, who had been treated for acute nephritis at the age of two and a half years. Since then he had intermittently passed dark urine. For the last two years he had suffered vague abdominal pain, dull and aching in character, and present most of the time. The pain passed right across the abdomen, was not associated with food, and was not relieved by anything. In July, 1957, he had developed headache, cough, vague pains all over the body, weakness and anorexia, and the urine became very dark. That lasted four days, then passed off. Two weeks later cough and headache returned transiently for one day. Normally he was not weak or tired. He was not breathless, and had lost no weight. He had no frequency, burning or scalding of micturition. There was no renal angle pain or renal colic. No bright blood was passed in the urine. Between 1948 and 1950 he had been investigated for hæmaturia. Inquiry into his family history showed that his parents and two siblings were well. One aunt, his mother's sister, had passed dark urine till the age of 15 years; otherwise there was nothing relevant in his family history. The patient was an apprentice fitter by trade, and did not smoke or drink alcohol.

He was examined on August 22, 1957. His pulse rate was 78 per minute, and sinus arrhythmia was present. His blood pressure was 165/95 millimetres of mercury. The apex beat was in the sixth left intercostal space. The first heart sound was split in the mitral and tricuspid area, and a tricuspid systolic murmur appeared with exercise. He was not pale and had no oedema, and no renal angle tenderness was present. The kidneys were not palpable. There was a heavy cloud of albumin in the urine, the specific gravity of which was 1020. The patient had long fingers and a high palate. No abnormality was detected in the respiratory, alimentary or nervous system. A number of investigations were carried out. Blood examination showed that the hæmoglobin value was 16.5 grammes per 100 millilitres; the leucocytes numbered 5000 per cubic millimetre, 48% being neutrophils, 2% eosinophils, 1% basophils, 38% lymphocytes, 10% monocytes and 1% band forms. An erythrocyte sedimentation test showed the rate to be eight millimetres in one hour (normal, two to four millimetres). A Ham test and a Donath-Landsteiner test gave normal results, and the bleeding and coagulation times were normal. The platelets numbered 350,000 per cubic millimetre. The red cell fragility was normal. The responses to the Wassermann test and to the Kahn flocculation test were negative. On August 24, microscopic examination of the urine revealed four to ten red cells per high-power field. Similar examinations on September 12 revealed 15 to 20 red cells per high-power field, with occasional epithelial and granular casts, and on September 15 the figures were 25 to 30 red cells per high-power field, and occasional epithelial and granular casts were again present. The urine was sterile. The blood urea content was 23 milligrammes per 100 millilitres. The urea clearance was 114% of the normal average. Mess's test produced a negative result. On August 31 a water concentration test gave the following results: 6 a.m. specimen, two ounces, specific gravity 1.012; 7 a.m. specimen, 4.5 ounces, specific gravity 1.012; 8 a.m. specimen, 3.5 ounces, specific gravity 1.012. The test was repeated on September 10 with the following results: first specimen, seven ounces, specific gravity 1.020; second specimen, four ounces, specific gravity 1.022; third specimen, four ounces, specific gravity 1.018. On August 29 the urine was tested for albumin. The specimen taken at 6 a.m. before the patient had risen contained "one-quarter" albumin; the specimen at 12 noon, after activity, contained a heavy cloud (about one-twelfth) of albumin.

On August 28 an intravenous pyelographic examination was made. No abnormality was seen in the left renal tract. The right calyces were dilated, but the pelvis was within normal limits. The right ureter was not outlined, but as far as could be seen was within normal limits. No calculi were seen. The examination was repeated on September 12. In the plain X-ray film, the kidneys were normal in position

and outline. No opaque calculi were seen. Function was adequate, slightly better on the left side than on the right. Clubbing of the right calyces was apparent, and there was a band of constriction at the junction of the upper right major calyx and its minor calyces. There seemed to be some narrowing of the right ureter, just below the third lumbar transverse process. That was thought to be possibly due to a previous calculus, but the suggestion was made that it might be the result of a previous operation. A retrograde pyelographic examination was suggested, and was carried out on September 13. The renal shadows and collecting systems on both sides were normal in appearance. The minor calyces of the right kidney were a little larger than average. On September 18, under local anaesthesia, percutaneous lumbar aortography was performed, with the use of "Urografin" (60% solution). The patient experienced no symptoms. The tip of the needle was near the level of the origin of the renal arteries. On the right side the arterial supply to the upper two-thirds of the kidney was well demonstrated. About three inches lower down an artery was seen crossing the upper part of the ureter and apparently supplying the lower pole of the kidney. That artery was apparently causing slight pressure on the ureter, or on the lower part of the renal pelvis. As the films were followed through, a good right nephrogram was seen, with slightly lessened density of the lower portion. On the left side the artery supplying the upper part of the kidney was seen, but it was less dense than on the right, no doubt owing to the fact that less contrast medium entered that vessel. The arterial supply to the lower part of the kidney was not seen. The left nephrogram was less dense than the right (again owing to the fact that a small amount of contrast medium entered the kidney), but it was clear that contrast medium was present in the lower pole. Review of the retrograde films showed that the early films revealed lack of filling of the calyceal pattern in the lower pole of the left kidney, but later films showed a normal picture. The interpretation placed upon review of all the films taken was that there was an aberrant arterial supply to the lower pole of each kidney. On the left side, that aberrant artery had not been seen because insufficient contrast medium had entered it. That artery also crossed the lower calyx of the left kidney and was responsible for that calyx's failing to fill in the early retrograde pyelogram. No other abnormality was seen. On October 5, 1957, under local anaesthesia, percutaneous lumbar aortography was performed, with the use of 50 millilitres of a 76% solution of "Urografin". The patient experienced only a moderate burning feeling. The needle was just below the level of each upper renal artery. An aberrant artery supplying the lower pole of each kidney was well outlined. Serial films demonstrated good nephrograms of the lower half of each kidney. From the test dose of contrast medium a pyelogram was produced. There was a suggestion of some narrowing of the right upper major calyx. No other abnormality could be seen.

Essential Cryoglobulinæmia.

DR. J. H. DEAKIN showed a married woman, aged 60 years, who in May, 1955, had suffered an attack of hives on the lower limbs, which had progressed to brown pigmentation. In February, 1957, she had attacks of purpura involving the face and precipitated by cold. She also had ulceration of the ears and atypical Raynaud's phenomenon. In September, 1957, she suffered from leg ulcers, which recurred in March, 1958. On examination of the patient after exposure to cold, she was found to have a purpuric rash of butterfly distribution over the face. Ulceration of the ears was present, and she had epistaxis. There was brown pigmentation and ulceration of the legs. Neither the liver nor the spleen was palpable, and there was no sternal tenderness. A number of investigations were carried out. Investigation of the blood showed that the hæmoglobin value was 13 grammes per 100 millilitres, and the platelets numbered 350,000 per cubic millimetre. Hess's test produced a negative result. The leucocytes numbered 4500 per cubic millimetre, 65% being neutrophils, 1% eosinophils, 1% basophils, 20% lymphocytes, 11% monocytes and 2% band forms. The erythrocyte sedimentation rate was 55 millimetres in one hour (normal figure 0 to 20). No proteinuria was present. No L.E. cells and no cold agglutinins were found. The total protein content of the blood serum was 7.1 grammes per 100 millilitres (albumin 4.0 grammes, globulin 3.1 grammes per 100 millilitres). An X-ray examination of the chest and skull revealed no abnormality. Sternal marrow biopsy revealed a slight increase above normal in the number of plasma cells. A test for cryoglobulins gave a positive result. The patient was treated with intravenous injections of ACTH.

Bacterial Endocarditis.

DR. Z. FREEMAN showed a female patient, aged 24 years, suffering from bacterial endocarditis, who presented several points of interest. She had previously had a normal heart, and no rheumatic or congenital valvular lesions were present. Whereas the pathological pattern was that of acute ulcerative endocarditis, the clinical picture was of an insidious, almost afebrile, illness. The salient presenting symptom was acute arthritis of the great toe joint, resembling podagra.

On August 2, 1956, the patient, a sister on night duty at a public hospital, complained of a swollen but not painful right ankle, and of some aching in the knees. She also said that she had lost weight, had become more easily fatigued, and had had amenorrhoea for three months. The swollen ankle she thought was due to an injury received six weeks previously. On examination, she was found to have a normal temperature and a slightly puffy right ankle, which was not tender. She appeared rather thin, and no heart murmurs were present. Her blood pressure was 120/65 millimetres of mercury, and her urine was normal. An X-ray film of her chest was clear, but a blood count revealed hypochromic anaemia and leucocytosis; the haemoglobin value was 10.3 grammes per 100 millilitres, the red cells numbered 4,000,000 per cubic millimetre, and the leucocytes numbered 17,200 per cubic millimetre, 77% being neutrophils. Twelve days later she was admitted to hospital with a cough, a severe, sharp pain in the left side of her chest and a low-grade fever. The condition settled down in five days with crystalline penicillin given every six hours. No heart murmurs were noted, and there were no other physical signs. A microscopic examination of the urine revealed three to six leucocytes and up to three erythrocytes per high-power field. About a month later, she recalled in retrospect that she had noticed a tendency to perspire freely at night and had odd aches in her loins. As she felt "run-down", she took a fortnight's holiday, and her condition was much improved. Two days before she returned to Sydney her left great toe joint became red, painful and swollen, her condition closely resembling podagra, and a purpuric rash was noted around the joint. She also had pain in the right calf. Some ankle oedema was still present on that side. Her temperature was 101° F.

On her admission to hospital for investigation, a blood count gave the following information: the erythrocytes numbered 3,270,000 per cubic millimetre, the haemoglobin value was 10.2 grammes per 100 millilitres, and the platelets numbered 290,000 per cubic millimetre; the leucocytes numbered 12,000 per cubic millimetre. The erythrocyte sedimentation rate was 37 millimetres in one hour. No L.E. cells were seen, and the blood uric acid level was normal. Her temperature on her admission to hospital was normal, but two days later rose to 103° F. for one day, and thereafter, except for a very occasional "spike" up to 100°, was basically normal for the next seven weeks. During the next few days, petechiae appeared on her arms, while the pain in her right calf continued. Microscopic examination of the urine revealed no abnormality, and the urine was sterile. The erythrocyte sedimentation rate was 39 millimetres per hour, and no cardiac murmurs were heard. Five blood cultures were taken, from which no growth of micro-organisms was obtained at 48 hours or at seven days. A further microscopic examination of the urine next day showed it to contain six to ten erythrocytes per high-power field. At that stage, the fourteenth day of the illness, a grade II systolic murmur was heard at the apex, and small round fundal haemorrhages were noted. That was followed shortly by the appearance of papular nodules in the skin of the palms. Penicillin, in a dosage of two megaunits every four hours, and streptomycin, one gramme twice a day, were administered without resorting to further blood cultures. Severe headache became a distressing feature, and an aortic diastolic murmur was noted on the sixteenth day. A blood count now showed the haemoglobin value to be 9.4 grammes per 100 millilitres, and the leucocytes numbered 12,000 per cubic millimetre, 68% being neutrophils. The erythrocyte sedimentation rate was 42 millimetres in one hour. The Mantoux test produced a negative result. An X-ray examination of the chest revealed no abnormality. Because of the headaches, a lumbar puncture was performed, but the cerebro-spinal fluid was clear. Headache and vomiting continued, and her general condition deteriorated. The spleen was not palpable, nor did it ever become so. On the twenty-second day of the illness, her face became swollen and a tooth was extracted. One colony of *Escherichia coli* was grown from the root. An electrocardiographic examination made at that stage revealed no abnormality, and an X-ray examination of the teeth revealed another

apical abscess. Erythromycin, in a dosage of 200 milligrammes every six hours, was added to the treatment on the twenty-second day, in view of the apparent lack of response, and eight days later the streptomycin was suspended after two weeks' administration. Oral monilia appeared, and responded to the exhibition of "Mycostatin" in a dosage of two tablets three times a day. On the twenty-ninth day, when she was practically afebrile, the patient had another infected tooth removed, and a swab yielded a growth of coliform organisms and non-haemolytic streptococci. The haemoglobin value during that time varied from 11.7 to 13 grammes per 100 millilitres, but did not go lower. The maximum leucocyte count was 16,000 per cubic millimetre, and the average was about 10,000. The erythrocyte sedimentation rate slowly fell from 42 to 14 millimetres per hour at the eightieth day. The response still appeared in doubt at the seventy-second day, as there were no definable yardsticks by which it was possible to tell whether a response was occurring, although the patient felt a little better. "Albamylin" was substituted for erythromycin, but was soon suspended as it produced a rash, so the erythromycin-penicillin combination was continued to the eightieth day. The patient was discharged from the hospital on the eighty-seventh day with free aortic incompetence, but after 12 months there had been no recurrence of infection. Recent examination of the patient showed her to have a large left ventricle, and evidence of mild pulmonary congestion, for which she was treated with "Diamox" on three days a week. X-ray examination confirmed the clinical impression, and showed the contrast between the heart size in 1956 and at the time of the meeting. Her blood pressure was then 150/20 millimetres of mercury. Dr. Freeman said that the ultimate prognosis was doubtful.

Torula Meningitis.

DR. GEORGE SELBY showed a housewife, aged 45 years, who had had a respiratory infection in May, 1957, and about that time began to complain of frontal headaches, which progressively increased in severity and were later accompanied by vomiting. In August, 1957, she suffered from transient pain in the face, and a few weeks later experienced pain in her buttocks radiating along the backs of both legs and attended by some weakness of her legs. She complained of fatigue and lassitude and lost weight. She became depressed and mentally confused and irrational, and admission to a psychiatric hospital was planned. While she was awaiting admission, papilloedema was discovered, and she was admitted to the Royal North Shore Hospital on October 25.

On examination, the patient was confused and euphoric, had advanced bilateral papilloedema, a moderate left perceptive deafness and slight neck rigidity. No focal neurological signs were found. There were no abnormal physical signs in the chest, cardio-vascular system or abdomen. She had an elevation of temperature up to 103° F. The cerebro-spinal fluid was obtained at a pressure of over 300 millimetres of cerebro-spinal fluid. It contained 101 neutrophils, 56 lymphocytes and five monocytes per cubic millimetre. The protein content was 165 milligrammes per 100 millilitres, the globulin content was greatly increased, the chloride content was 675 milligrammes per 100 millilitres, and the sugar content was nine milligrammes per 100 millilitres. *Cryptococcus neoformans* (*Torula histolytica*) was present on an indian ink preparation and grew profusely on culture. No acid-fast bacilli were found in the smear or on culture. Examination of the blood showed the haemoglobin value to be 12.3 grammes per 100 millilitres and the leucocytes to number 7900 per cubic millimetre, with a normal distribution. The erythrocyte sedimentation rate was raised to 17 millimetres in one hour (normal, two to six millimetres). The blood urea content was 21 milligrammes per 100 millilitres. An X-ray film of the skull was normal. An X-ray examination of the chest revealed a round opacity, about one inch in diameter, in the right mid-zone. The Mantoux reaction was positive. Neither acid-fast bacilli nor *C. neoformans* were found in the sputum or gastric lavage. Two further examinations of the cerebro-spinal fluid confirmed the presence of *C. neoformans* in the smear and on culture, and a diagnosis of torulosis and torula meningitis was established.

Treatment with daily intravenous injections of "Fungi-zone" ("Amphotericin B"—Squibb) was begun on October 28, and continued until November 26, 1957. The initial dose was 12.5 milligrammes per day, and the dose was gradually increased up to 50 milligrammes per day, dissolved in 500 millilitres of 5% dextrose solution, and given as a slow intravenous drip infusion. At the end of each infusion toxic symptoms occurred, including an exacerbation of the fever and mental confusion, rigors and vomiting. Early in

December, 1957, metabolic alkalosis resulted from the persistent vomiting, causing frequent and severe attacks of tetany, which were treated by the administration of "Carbogen" and intravenous drip infusions of normal saline with added potassium. Progressive loss of weight continued, and the patient's general condition deteriorated rapidly. The blood urea content remained normal, but she developed severe hypochromic anaemia with a haemoglobin value of seven grammes per 100 millilitres, and required transfusions of packed cells. On repeated examinations of the cerebro-spinal fluid, the pressure always exceeded 200 millimetres of cerebro-spinal fluid, and both the pleocytosis and biochemical abnormalities remained. *C. neoformans* persisted in both smears and cultures of the cerebro-spinal fluid. Intravenous "Fungizone" therapy was suspended at the end of November, 1957, and the patient became progressively more confused, disorientated, hallucinated and restless.

On January 2, 1958, intrathecal "Fungizone" therapy, in a dose of one milligramme of "Fungizone" dissolved in 10 millilitres of sterile water, was begun and continued every second day until January 20, a total of 10 intrathecal injections. After each injection the fever increased, and neck rigidity, mental confusion and restlessness were temporarily aggravated.

Ten days after the completion of the course of intrathecal "Fungizone" therapy, the patient's condition began to improve; she was no longer restless or confused, and gradually returned to a normal mental state and began to gain weight. The papilloedema subsided, but she was left with a moderately severe consecutive optic atrophy, and some left conductive hearing impairment. When first attempting to walk she was ataxic, but balance improved gradually. Caloric tests of labyrinthine function gave results within normal limits. The consecutive optic atrophy was treated with ultrasonic therapy to the orbits and a course of ACTH, and later with a brief course of prednisone. Her sight improved to a degree where she was able to read large print and distinguish some colours.

Dr. Selby said that since the first intrathecal injection of "Fungizone", no *T. histolytica* was found in repeated smears and cultures of the cerebro-spinal fluid. The cerebro-spinal fluid pressure decreased gradually, the number of cells diminished, and the chemical constituents of the fluid returned to normal. On March 10, 1958, the cerebro-spinal fluid was obtained at a pressure of 100 millimetres of cerebro-spinal fluid; it contained 11 lymphocytes per cubic millimetre, 72 milligrammes of protein per 100 millilitres, and 36 milligrammes of sugar per 100 millilitres. The X-ray shadow in the right mid-zone had slightly decreased in size, and surgical excision of that pulmonary lesion was planned at a later date.

Myasthenia Gravis.

DR. ERIC DAVIS showed a female patient with an eleven weeks' history of dysarthria, dyspnoea, blurring of vision, dysphagia, difficulty in getting rid of her pharyngeal secretions, difficulty in holding up her head, weakness and lassitude, all worse at the end of the day. Physical examination showed her to have a dilated left pupil, bilateral facial weakness and palatal palsy, which lasted only an hour or so. Lumbar puncture produced cerebro-spinal fluid that was clinically, cytologically and biochemically normal. Her symptoms were rapidly and dramatically relieved by "Prostigmin" and "Tensilon" and were produced again by quinine sulphate. She was being maintained on "Mestinin" in a dosage of 60 milligrammes by mouth four times a day.

Aortic Valvotomy.

MR. IAN MONK said that the two patients to be presented represented the youngest and the oldest patients with aortic stenosis on whom operation had been undertaken. In the preceding five months, nine patients had been operated on with one death. The last six consecutive operations had been carried out without mortality.

The first patient, a married woman, aged 60 years, had suffered a syncope attack at the age of 42 years. Since then she had had breathlessness on exertion and anginal pain on effort. Those symptoms had increased in severity, more particularly the pain, so that she had become almost bedridden. Her clinical condition presented as severe aortic stenosis with well-marked changes in the electrocardiogram. Pressure records taken simultaneously by left ventricular puncture and brachial artery puncture revealed a pressure gradient across the aortic valve of 150 millimetres of mercury. Transventricular aortic valvotomy was carried out on March 28, 1958, and pressures taken at operation showed

the gradient across the aortic valve to be considerably reduced.

The second patient, a boy, aged 14 years, had been noted to have a heart murmur at birth. There had been no symptoms referable to his heart, but he had been referred recently for investigation. He was found to have severe aortic stenosis and early changes in the electrocardiogram suggesting so-called strain. Physiological investigation showed a pressure gradient between the left ventricle and the aorta of over 80 millimetres of mercury. On April 2, 1958, under hypothermia, his temperature being reduced to 29.5° C., a transaortic (open) valvotomy was performed. The circulation was stopped for seven and a half minutes, the aorta was opened, and the fused commissure anteriorly was divided with scissors and then the valve dilated to 3.5 centimetres. Recovery from the procedure was uneventful.

Gross Bleeding from a Gastric Ulcer in a Child.

MR. ERIC GOULSTON showed a girl, aged eight years, who had been referred to the hospital on December 18, 1957, by Dr. Trevor Allen with a history of peri-umbilical pain and vomiting of three days' duration. The day preceding her admission she had vomited dark altered blood on two occasions, and later fresh blood, amounting in all to two pints. That evening she vomited a pint of bright blood. She had taken only small amounts of fluid over the three days. There was nothing of note in her previous or family history, except a story of a minor fall three weeks earlier.

On her admission to hospital she looked pale and had some epigastric tenderness. Her pulse rate was 160 per minute, her haemoglobin value was 10 grammes per 100 millilitres, and her blood pressure was 106/68 millimetres of mercury. She was given a blood transfusion of 500 millilitres, and later that day a barium meal X-ray examination was performed. It showed an irregular appearance of the gastric pattern, related to the presence of blood clot or to a large rounded filling defect in the pyloric antrum.

The next day she had a further hæmatemesis of 10 ounces and some melæna. Her haemoglobin value was nine grammes per 100 millilitres. Her blood group was O. A further transfusion of 250 millilitres of blood was given and operation decided upon. At operation, a large, acute, snail-track prepyloric ulcer was found with surrounding oedema, and a segmental resection was performed. Macroscopic examination of the specimen showed that a shallow, irregular ulcer measuring two centimetres in its greatest diameter was present on the lesser curvature of a small segment of the stomach. Microscopic examination showed subacute inflammatory changes. Apart from some pyrexia and some further melæna, her convalescence was uneventful, and she was discharged from hospital on January 7, 1958, on a Meulengracht diet and alkalis.

Mr. Goulston commented that peptic ulceration in children was usually an acute inflammatory process with little attempt at repair. Surgery and blood replacement might therefore be more urgent than in adults to deal with complications.

Hemicolectomy.

MR. T. F. ROSE showed six patients who had undergone hemicolectomy.

Acute Appendicitis Complicating Caecal Carcinoma.

The first patient, a woman, aged 50 years, had had vague attacks of generalized abdominal pain for four years, subsequently attributed to a mucocoele of the gall-bladder due to a calculus impacted in the cystic duct. However, three years prior to operation a barium enema X-ray examination revealed a normal caecum and colon. For the two days prior to operation she had had pain all over the lower part of her abdomen, worse in the right iliac fossa. Examination of the patient on the day prior to operation disclosed a tender mass in the right iliac fossa.

At operation an acutely inflamed appendix was found, and there was a hard encircling carcinoma at the junction of the caecum and ascending colon, which had extended almost completely through the bowel wall. Histological examination showed the growth to be an adeno-carcinoma. There was no evidence of lymph node involvement. A right hemicolectomy was performed with end-to-side ileo-transverse colostomy. Convalescence was uneventful.

The second patient shown by Mr. Rose was a man, aged 58 years, who had had recurrent pain in the right iliac fossa for the previous nine months, together with epigastric discomfort and flatulence. In the three days prior to operation he had had generalized abdominal pain and vomiting.

On examination, he had a temperature of 102° F., with tenderness and rigidity in the right iliac fossa. Operation disclosed a gangrenous appendix whose base was blocked by a large caecal carcinoma, later shown to be a well-differentiated adenocarcinoma penetrating the muscle wall, but with no lymph node involvement. A right hemicolectomy was performed with end-to-side ileo-transverse colostomy. Convalescence was uneventful, and some six months later the patient was well.

Mr. Rose's third patient, a man, aged 55 years, had had occasional attacks of epigastric discomfort and diarrhoea over the 12 months prior to operation. For the three weeks prior to operation he had complained of central abdominal pain and nausea, which had become worse in the few days prior to operation and was accompanied by vomiting. Examination of the patient disclosed tenderness and rigidity in the right iliac fossa and a temperature of 100° F. At operation, acute suppurative appendicitis was found, due to obstruction by a caecal carcinoma which already had peritoneal seedlings on the caecum. Later, microscopic examination showed that the carcinoma was anaplastic, with involvement of one of four lymph nodes. Immediate hemicolectomy was performed. Convalescence was normal.

Comment.

Mr. Rose said that the patients were fortunate that the carcinomata had caused obstructive appendicitis, operation for which revealed the more serious lesion. Their cases also showed the efficacy of urgent right hemicolectomy for that disease.

Simultaneous Carcinoma of the Caecum and Transverse Colon.

Mr. Rose then showed a female patient, aged 58 years, who had had a history of malaise, weakness and increasing breathlessness on exertion for the 12 months prior to operation. In the nine months prior to operation she had had constant mild right-sided abdominal pain. She was investigated radiologically with a "barium meal and follow-through", and a barium enema, but an apparently normal gastro-intestinal tract was revealed. In the three months prior to operation she had increasing constipation, but no diarrhoea. Examination of the patient on her admission to hospital disclosed a small, hard swelling in the right hypochondrium and a second similar mass below it in the right iliac fossa. X-ray examination with a contrast enema revealed persistent narrowing at the right end of the transverse colon. The caecum showed a large filling defect. Severe secondary anaemia was present. Operation revealed a carcinoma of the caecum and one of the transverse colon, both of which were later shown to be well-differentiated adenocarcinomata. There were no metastases in the lymph nodes examined microscopically. There were no obvious metastases in the abdomen. A right hemicolectomy and transverse colectomy was performed, with anastomosis of the terminal portion of the ileum to the descending colon. Convalescence was normal. Mr. Rose said that the problem was whether there were separate primary growths, or whether one was secondary to the other.

Crohn's Disease of the Ileum.

Mr. Rose showed next a male patient, aged 28 years, who nine years previously had undergone a right hemicolectomy for regional ileitis involving the terminal portion of the ileum. Since then he had had several episodes of colicky abdominal pain, vomiting and constipation, each eventually relieved by conservative measures. His last attack had lasted for the three days prior to his admission to hospital, and had then spontaneously subsided just prior to admission. Examination of the patient disclosed some abdominal distension only, and X-ray examination with a barium enema showed evidence of stenosis at the site of the ileo-transverse colostomy; this was confirmed by laparotomy a day or so later. The area was resected and further anastomosis performed. Later microscopic examination revealed fibrous tissue only, and no evidence of active Crohn's disease. Convalescence was satisfactory.

Mr. Rose said that the case illustrated a not uncommon late result of intestinal anastomosis in Crohn's disease, a fibrous stricture, though often it had more of the microscopical picture of Crohn's disease.

Tuberculosis of the Ascending Colon.

Mr. Rose finally showed a male patient, aged 37 years, who had had severe pulmonary tuberculosis for the nine years prior to operation. He was treated conservatively and with

a phrenic crush. Within a year he developed tuberculosis of the intestine with colicky pain and diarrhoea. X-ray examination with a barium enema eight years prior to his admission to hospital revealed a stricture in the ascending colon. He was treated with streptomycin and had no positive pain for four years, when one year prior to operation he developed more colicky abdominal pain, diarrhoea and intermittent swelling in the right iliac fossa. The attacks were now accompanied by vomiting. During each attack examination disclosed ballooning of the caecum. X-ray examination with a barium enema disclosed a stricture of the ascending colon, with a grossly and irregularly enlarged caecum. Right hemicolectomy was performed, and showed that he had a tight, ulcerated, constricted area of the ascending colon, below which was a grossly hypertrophied, otherwise normal caecum. Microscopic examination of the strictured area revealed chronic non-specific inflammatory changes in the bowel; but the lymph nodes had the tubercles of tuberculosis, and there were similar deposits on the peritoneal surface of the stricture. Convalescence was normal, but three months later he developed an episode of acute small-bowel obstruction, which responded to conservative measures.

Mr. Rose commented that though it had often been said that most cases of caecal and colonic tuberculosis were really cases of Crohn's disease, nevertheless tuberculosis did occur in those sites, as Anard of India had shown, and the present case was a true example of colonic tuberculosis.

Unusual Parotid Tumour.

Mr. E. F. LANGLEY showed a male patient, aged 21 years, who presented an unusual type of parotid tumour. His condition had first been noted when he reported with a sore throat, and his doctor observed, on examining his throat, that he had a large swelling on the left side of his pharynx; on further examination, it was noted that the left side of his jaw was much more prominent than the right—a condition which he said had been present for years. Bimanual examination disclosed that a large tumour at least three inches in diameter was present medial to the angle of his jaw; it was just palpable as a small lump below and in front of his ear, the great bulk of the tumour being palpable and visible in his mouth. Needle biopsy was performed, and the tumour was identified as a mixed parotid tumour. Photographs were taken to demonstrate asymmetry of his face. Unfortunately, those taken to show the tumour in his mouth were very unsatisfactory. At operation, fortunately, the facial nerve was superficial to the tumour and was freed and retracted out of the way. Before the tumour could be removed, it was necessary to cut through his mandible about one inch in front of the angle of the jaw; then, with the upper part retracted forward, the tumour and parotid gland could be removed. After operation he had some minor weakness of the cervico-facial branch of the facial nerve, but it appeared to have completely recovered.

(Psychogenic) Asthma Treated Successfully by Narcoanalysis.

Dr. I. A. LISTWAN showed a girl, aged 17 years, who had developed severe attacks of asthma at the age of six years and continued to have them without interruption until recently. The attacks appeared mostly at night, recurred every night and were accompanied by a horror of being closed in and of being left alone. The patient also complained of a rash which, however, was not so disturbing to her as the attacks of asthma. She consulted many doctors and had many treatments without result. In the last year the attacks had become more frequent, had interfered with her work and general enjoyment of life, and had made her unhappy and depressive. The situation became serious as she grew up and was unable to establish satisfactory social relations because of her physical disability. All the relevant tests were performed with negative result, and finally she was referred for psychiatric treatment.

Dr. Listwan said that inquiries into the patient's background revealed that she had spent the first five years of her life in a concentration camp during the war. She was there with her parents, who were killed. At the age of six she was adopted and taken to England, from where she had come with her adoptive parents to Australia. She had a step-brother and two step-sisters, with whom she was on good relations. The parents were mildly strict and would restrict her interests to some extent. Her progress at school was interfered with by her asthma, and she had to stop going to school at the age of 14. She continued to learn shorthand and typing and worked in a few places at clerical work, and recently she had worked in her parents' business. There was more disagreement with her parents when she felt that

she would like to be more independent. She felt frequently that she was not like other girls, and developed extreme shyness and difficulty in mixing with people.

Her personality was tested by way of clinical examination and by psychological tests. The Rorschach test revealed marked psychic tension with inhibitions, rigid control and anxiety. There were marked signs of guilt and depressive states. She was insecure and had suicidal phantasies. She had many phobias of hate and accidents. Most of her affection was given to animals, little being left for human associations. Her intelligence on the Wechsler scale was "average".

The patient was investigated with the use of "Pentothal" in May, 1957. Two interviews were conducted; the contents were recorded on records. They were, however, not played back to the patient because of the possible traumatic effect. They disclosed very clearly the psychodynamics leading to the development of asthma. It appeared that the circumstances of the death of her parents were associated in the patient's mind with guilt feelings about being left alive. She was under the impression that they had to die in order to save her life. She was further under the impression that her mother was drowned, or that she was killed by her father under pressure. She had a pet dog which was killed as well. Those circumstances had undoubtedly led to the fragmentation of her personality, to the development of strong feelings of insecurity, and to fear of forming attachments to humans, as she had been hurt before, with a compensatory attachment to animals. Later in life she avoided emotional involvement; that accounted for her withdrawal and for the schizoid features in her personality. She had inhibitions when meeting people. The attacks of asthma were a repetition of the drowning situation of her mother, and also a means of gaining attention from her adoptive parents. Particularly the fear of being closed in indicated the repetition of her mother's situation. About a year prior to the meeting the patient's compensation claim was lodged, and for that purpose her real name had to be disclosed. That caused a further split of her personality, and a stronger division of loyalties between her parents and her adoptive parents. That result could be compared with the situation of people who changed names or religion. At the same time the asthma attacks became more severe.

Dr. Listwan said that the dynamics he had described were discussed in a very cautious way with the patient, without uncovering the repressed childhood memories. The effect of that procedure was satisfactory. In June, 1957, the patient had reported that she was well in all respects and that a load was lifted from her chest. She reported further in August, 1957, that she had had no attacks of asthma, and that she had never felt so well in her life. She was again examined on April 14, 1958, when she said that she had had no attacks of asthma since May, 1957, that she had taken no tablets during that whole period (11 months), that she had been working all the time, and that although she still had the rash from time to time, it did not worry her. However, she had one asthma attack on April 12, after she had been asked to attend the present clinical demonstration. Dr. Listwan said that the prognosis could not be given with certainty. It appeared, however, that the condition was purely psychogenic asthma.

Carcinoma of the Larynx Treated by Hemilaryngectomy.

Mr. E. H. Ross showed a male patient, aged 63 years, who had first attended the out-patient department in January, 1958, suffering from a sore throat for four months and hoarseness for two weeks. There were no palpable cervical glands. On direct laryngoscopic examination, a small growth was seen on the right vocal cord adjacent to the anterior commissure. The cords were fully mobile. He was admitted to hospital on January 24 for direct laryngoscopic examination and biopsy and further investigation. He was found to have hypertension (blood pressure 220/120 millimetres of mercury), a left inguinal hernia and a mild degree of cardiac failure. A laryngoscopic examination and biopsy were therefore carried out under local anaesthesia, and the patient was discharged from hospital next day. The pathologist reported that the biopsy specimen was from a squamous carcinoma of the larynx.

The patient was therefore readmitted to hospital on February 13. At that time his pulse rate was 116 per minute and his blood pressure 210/100 millimetres of mercury. Operation was postponed until he had had a week's rest with sedation, as advised by the honorary physician (Dr. I. A. Brodziak). On February 21 operation was performed under local anaesthesia. A mid-line incision from

the hyoid bone to the sternal notch was made and a low tracheostomy established. As the tumour was adjacent to the anterior commissure, the anterior third of the larynx (thyroid cartilage and cords with anterior commissure) was removed *en bloc*. The anterior commissure was then examined, and no trace of the original lesion could be seen. However, as the right cord showed some thickening which extended onto the arytenoid area, the whole of the right cord together with the arytenoid cartilage was removed. Haemostasis was secured with diathermy and the wound sutured. The tracheostomy was closed after 24 hours, and the patient made an uneventful recovery. Microscopic examination of the vocal cord revealed a small area of intra-epithelial squamous-cell carcinoma which had not yet begun to infiltrate.

Mr. Ross said that at operation it appeared at first sight that the carcinoma had been removed *in toto* at the biopsy; but the tell-tale thickening of the cord made it necessary to remove the whole of the right cord. That that was justified was shown by subsequent biopsy, which revealed carcinoma after a second biopsy had been performed to find it. It was unusual to remove so much intralaryngeal tissue at that operation—the anterior third of one cord and the anterior third of the thyroid cartilage and the whole of the other, together with the whole of the arytenoid cartilage. However, the patient retained a functional larynx and a serviceable voice. In such an early carcinoma the chances of recurrence were extremely remote.

Leriche Syndrome Treated by Aortic Replacement.

Mr. G. D. Tracy showed a male patient, aged 48 years, who had been admitted to the Royal North Shore Hospital on November 16, 1957, complaining of pain in the legs of 13 months' duration. In October, 1956, while on a long motor-car drive, he had noticed that his right leg became cold, pale and numb, and pain extended from the toes to the thigh. A similar chain of events was noticed in the left leg, but the pain gradually disappeared. However, on walking the patient found that he had to stop after 35 to 50 yards because of severe pain in the calf radiating up the leg to the buttock. In November, 1956, bilateral lumbar sympathectomy was carried out, but there was no improvement in the condition. At the time of his admission to hospital the patient was severely disabled by claudication, and was impotent. Physical examination revealed absence of both femoral pulses and no palpable peripheral pulsations in the legs. The physical findings were otherwise normal, the blood pressure being 145/95 millimetres of mercury. Aortography had been unsuccessful at the time of the sympathectomy and was not attempted again.

On November 17, 1957, under general anaesthesia, exploration of the abdominal aorta was undertaken through a mid-line abdominal incision from the xiphisternum to the pubic symphysis, and showed that the aorta was thrombosed from just below the level of the renal arteries to the bifurcation. In addition, the left common iliac artery was thrombosed and the right common and external iliac and femoral arteries were occluded to the origin of the profunda femoris. An accessory incision was made in the right thigh in the line of the femoral artery. The thrombosed vessels were cleared, and arterial clamps were placed beyond the level of occlusion of each vessel after injection of 20 millilitres of dilute heparin (one milligramme per 100 millilitres) into each distal arterial trunk. As the proximal level of thrombosis was flush with the renal arteries, division of the aorta and disobliteration of a short segment had to be performed to allow placing of the aortic clamp distal to the renal arteries. The thrombosed aorta and bifurcation were excised and replaced with a bifurcation prosthesis of crimped nylon (Edwards-Tapp tube). A proximal end-to-end anastomosis to the aorta was performed with "0000" arterial silk. The left limb of the bifurcation was joined end-on to the end of the left common iliac. The right limb of the bifurcation was brought under the inguinal ligament and anastomosed end-to-side to the femoral artery in the thigh. After the operation, full peripheral pulses were restored to both legs.

Mr. Tracy said that the patient's post-operative recovery was complicated by a degree of renal failure characterized by a large output of urine of low fixed specific gravity and a rise in the blood urea level which reached 316 milligrammes per 100 millilitres on the seventh day after operation. The condition slowly improved, and the patient was discharged from hospital, well, on December 21. He had remained well, and until the time of the meeting had full pedal pulses and could walk an unlimited distance. Although he had lost the power of ejaculation (probably from the bilateral sympathectomies), he was no longer impotent.

Aortic Replacement for Abdominal Aneurysm.

Mr. Tracy's next patient was a man, aged 78 years, who had been admitted to the Royal North Shore Hospital on January 6, 1958, complaining of abdominal pain radiating through to the back. During a previous admission to that hospital in July, 1957, right inguinal herniorrhaphy had been performed, and the patient found to have an abdominal aneurysm. Because of his age and lack of symptoms, it was not treated at that time. The patient had had a traumatic amputation of the left leg in 1918. The patient had been well until the onset of severe abdominal pain three days before his admission to hospital. Although he suffered with some occasional retrosternal pain on exertion, his exercise tolerance was good, and he could walk several miles. He had had some difficulty in micturition in recent months. Physical examination of the patient revealed a firm, rounded mass in the umbilical region, about five inches in diameter, with an expansile pulsation. Physical findings were not otherwise significant, the blood pressure being 130/80 millimetres of mercury. Investigations included: a blood count, the figures being within the normal range; microscopic examination of the urine, which was found to be normal; a blood urea estimation, which showed a figure of 33 milligrammes per 100 millilitres; an electrocardiographic examination which showed left bundle branch block with evidence of ischaemic heart disease; a chest X-ray examination which revealed findings within normal limits; a lateral abdominal X-ray film which revealed a rounded shadow with peripheral calcification, about five inches in diameter, below the probable level of the renal arteries. Excretion pyelography failed to outline the renal tracts, although some dye was seen in the bladder. Aortography was not performed.

In spite of the evidence of ischaemic heart disease and of poor renal function, it was thought that the patient's symptoms suggested incipient rupture of the aneurysm; thus on January 13, under general anaesthesia, exploration of the abdominal aorta was carried out through a mid-line abdominal incision from the costal margin to the pubic symphysis. A large, globular, thin-walled abdominal aneurysm involving the terminal abdominal aorta was discovered. During mobilization of the aorta and both common iliac arteries, the aneurysm burst. Clamps were applied to control hemorrhage, and excision of the aneurysm was performed. The inferior vena cava was closely adherent to the posterior wall of the aneurysmal sac, and a laceration of the caval wall was produced during the dissection. This was closed with lateral sutures of "0000" arterial silk. The excised aorta was replaced with a bifurcation prosthesis of crimped nylon (Edwards-Tapp tube) with end-to-end anastomoses to the aorta and each common iliac artery with "0000" arterial silk. Thirteen units of whole blood were given during the operation, only one hypotensive episode of short duration occurring during bleeding from the vena cava.

Mr. Tracy said that the patient's immediate post-operative condition was satisfactory. On the second post-operative day he developed acute enteritis. That was followed by acute gastric dilatation with accompanying hypotension. The patient survived that episode, but developed renal failure, the blood urea level rising to 320 milligrammes per 100 millilitres on the ninth post-operative day. With continuous bladder drainage that condition slowly improved, but wound dehiscence occurred on January 29. Resuture was carried out under local anaesthesia, and the patient thereafter began to improve. Satisfactory wound healing occurred, and the patient was discharged from hospital on February 28. His condition at the time of the meeting was satisfactory.

Porta-Caval Anastomosis for Bleeding Oesophageal Varices.

Mr. Tracy finally showed a male patient, aged 56 years, who had been admitted to the Royal North Shore Hospital on December 23, 1957, with massive haematemesis. He was known to have cirrhosis and portal hypertension, having had five previous small haematemeses. Oesophageal varices had been demonstrated by X-ray examination with a barium bolus. The patient also suffered from trigeminal neuralgia. On the night of his admission to hospital the patient had had three massive haematemeses and was pale and shocked. Examination of the patient revealed peripheral vasoconstriction, pallor and sweating, and a systolic blood pressure of 50 millimetres of mercury. The liver and spleen were enlarged. Ten units of blood in a rapid transfusion were necessary to restore the patient's blood pressure, and the bleeding was controlled with a double balloon Sengstaken-Blakemore tube, the oesophageal balloon being inflated to a pressure of 70 millimetres of mercury. It was withdrawn

in 48 hours, and the patient was given oral feedings of a soft diet with "Amphogel" and magnesium trisilicate. Liver function tests gave results within the normal range.

On January 6, 1958, through a right thoraco-abdominal incision in the line of the eighth intercostal space, the right leaf of the diaphragm was incised peripherally to allow displacement of the liver into the right hemithorax. The portal vein and inferior vena cava were mobilized. The portal vein was divided close to its termination and anastomosed end-to-side to the inferior vena cava with "0000" arterial silk. The gall-bladder showed chronic inflammation with calculi, and cholecystectomy was performed. Mr. Tracy said that the patient's post-operative recovery was satisfactory, and he was discharged from hospital on the ninth day. He had remained well since, and X-ray examination with a barium bolus on March 27 failed to reveal oesophageal varicosities.

On The Periphery.

JOHNNY JONES GOES TO TOWN.

Now and again, the boys of Macquarie Street get the chance to whittle a few guineas from my banking account. It was on one such occasion, recently, that I met a friendly, rough-and-ready taxi-driver in his early forties.

"Macquarie Street, eh?", he asked, as I stepped in his cab. I nodded.

"Doctors!", he sniffed, and then began the story of his experience over the past year.

"Nerves! That's wot's me trouble. Nothing but bloomin' nerves, the Quack reckons. I was feelin' terrible orf colour, see. Gittin' that tired and weak, fair dinkum, I couldn't've fought me way outer a paper bag. No appetite either, and tossin' and turnin' all bloomin' night in me bed. A man's on the nose in this kind of job when that 'appens. So, I says to meself, up to the Quack for you, me boy, good and fast, and—up I goes!

It's ON all right, when you git in their 'ands. First thing I know, I'm stripped to me birthday suit. Fair dinkum, then he starts pokin' 'ere, and pokin' there, knocks me knees with a sorta little 'ammer, takes me blood pressure, sends me to an eye bloke, to see if there's any of them there tumour things on me brain, sends me to git X rays of me chest and stummick . . . the 'ole works, see, and back I lands again in a week's time. And wot does 'e say?

"Nerves, son. Nothin' wrong with you 'cept nerves." "Sufferin' cats", I says, "ME? Nerves? Why, Doctor, I 'aven't a nerve in the 'ole of me body." But all he says is, "Nerves it is, nothin' else. 'Ave to slow down", 'e says . . . 'give you a course of injections."

"That's prime", I says to the wife when I gits 'ome. "Next thing, I know, they'll be stickin' needles in me backside." The wife's one of these 'ere quiet sorta, see, and she says, "Johnny, if the doctor says injections, you gotta 'ave 'em, see?" Just like that! "O.K., O.K.", I says, "but NOT in me backside, see. You can't drive no taxi with a sore be'ind", I says to 'er. I oughter know. I saw plenty of coves in the army. Couldn't sit down, the poor coots, and all from 'avin' bloomin' needles in their backsides.

Anyhow, there it was, and I goes along the next week, and blow me if the Quack doesn't say, "I'll give it to you in the leg." "The leg?", I says, scentin' the wind, if you know wot I mean, see? And 'e says, "Turn 'round, the 'ip." "But I'm a taxi-driver, Doctor. 'Ow'd you like to drive a taxi all day with a stiff be'ind?"

He didn't take no notice, and before you could say rock 'n' roll, in it went. Boy! Did she sting! Still, I'll give 'im this in, it didn't last long, and me be'ind wasn't sore after. So it went on, week in and week out.

Then, one mornin' I gits there, and the doctor 'ad been called out suddenly, and the fancy bit of goods, the nurse, says to me, "To save yon waitin', I'll give you the injection." 'I'll 'ave it in me arm', I says, puttin' me foot down! Stone the crows, this bittuva kid, stickin' needles into a man's be'ind! Sorta went against the grain, if you know what I'm gittin' at. But, 'No', she argues, 'the doctor always give it in the 'ip.' So 'round I goes, back of the screen, drops me duds and away she goes. Boy! Whizz bang, I jumps up, swearing like blue blazes. Fair dinkum, I clean forgot she was there for the minute.

'Wot 'appened?', I asked, when I'd quietened down a bit. 'The needle broke, I'm afraid', she says, 'and half of it has remained in you.'

'In ME? Whadya mean, in ME?' Blimey, Charley, me be'ind, me wot 'as to sit down drivin' a taxi for me bread and butter, all day and 'arf the night. 'Arf a needle in me, mind you!

At first, I thought she mighta been 'avin me on, but lor luvva duck, it was no gag. The needle really 'ad broke, and it was like she said, 'arf in me!

'Do something', I sings out to 'er, 'and damn quick. Git it out, can't you?

'Oh, I couldn't', says she, all la-di-da like. 'You'll 'ave to wait until the doctor returns.'

'Ho! 'Ave to wait, will I?, me, with me taxi lyin' idle out there and dozens of customers screamin' their 'eads orf for a cab. 'Ave to wait, will I?'

'Yes', she says, and I could've knocked her flamin' 'ead orf! 'By the Lord 'Arry, you'll 'ear more of this', I warns 'er. But she did't seem worried. Oh no! It wasn't 'er be'ind, was it?

Then, in comes the Quack, polished up to the nines. When 'e gets a dekkko at wot's 'appened, 'e says, 'I'll give you a local anesthetic and get it out.' Another bloomin' needle! Then 'e begins probin' and probin' and probin', and blow me, he ends up NOT gettin' it out!

'There's nothin' else for it', 'e says, 'I'll ring up the hospital, and fix it with a surgeon friend of mine up there. You'll only be in the 'ospital for a day', 'e says.

'That's BER-U-TI-FUL', I says. 'A nice galah this girl of yours 'as made outter me, eh?' I was fightin' mad, I can tell you. 'E comes back from 'is 'phone and says it's Jake. 'Go straight up there, NOW', 'e says, and I says, 'Listen 'ere, mate, WHO the 'ell do you think I am, 'Enry Woolfe, the Sausage King? I can't afford no time orf lying around 'ospitals.'

'Course, it made no difference. I hadda go. First item on the programme up there was I'm marched into the bloomin' X-ray room. 'It's come to a pretty pass', I says to the nurse there, 'when a man 'as to 'ave his bloomin' backside X-rayed all because of a bloomin' needle.' 'Posterior is the word', says she in a 'igh falutin' tone. 'Ho!' says I, 'wot's that—Point Piper for be'ind?'

After that, I 'angs around for a while, then me wife—I'd 'phoned 'er you see—arrives. She keeps saying, 'Aven't they got it out yet, Johnny?' Holy mackerel, was I sick of the sound of that needle!

Then the time comes for me visit to the theatre. Decked me up in them there white pants, socks and turban affair, and orf I goes, lookin' like a white Christmas.

Another needle! This time in me arm. 'What the 'ell do these coots think I am, a bloomin' singer?', I says to myself. Then bang—I'm a goner. Over three hours on the table, they reckon I was. When I woke up, there's the wife, beside me, blubbering 'er 'ead orf, and next thing, in comes His Knibs, the surgeon. 'I've got bad news for you, Mr. Jones, 'e says, 'we couldn't recover the needle.' 'Oh blimey!', I said. I could've fair cried, I could. 'What about me goin' 'ome tonight?', I says, and 'e puts on a Joey Brown grin, and says, 'Fat chance—do you feel like goin' 'ome?' 'Not for a 'undred years', I says, 'not for a 'undred years!'

Would you believe it, I was in that bloomin' place for two and a 'arf weeks? Me wife nearly 'ad a nervous breakdown. 'It might go to your 'eart, Johnny, it might go to your 'eart', she keeps sayin'. Boy! Did I 'ave the wind up, even though they reckoned in the 'ospital that it was stuck in a muscle and wouldn't travel. 'That's all right about that', I says to meself. 'But it just might 'appen to take a fancy to go for its annual 'olidays, and land in me ear 'ole, or me 'eart, and then where'd I be?'

After a bit, I goes back to the Quack's rooms. 'I'm gonna see my lawyer about this', I tell 'im, and 'e says, 'That's O.K. The B.M.A.'ll attend to my part', 'e says. Some insurance idea these fellows 'ave, you know. Anyway, 'e says, 'Git wot you can. It won't affect me.' Cool as a lime, that feller. So I goes to me lawyer, then 'e goes to the Quack, and sees the dame wot caused all the trouble, then he goes to the B.M.A. blokes, and wot with one thing and another, I gits me expenses, and that's all.'

'And what—precisely—happened to the needle?', I asked, at the first real breathing spot in the conversation. I had to know the climax!

He patted his rear. "Still there", he said, half-grinning. "Doesn't worry me much, 'cept on wet days. But me nerves! Blimey, Charley, me nerves! They've gone to the bloomin' pack altogether. Doctors! Blasted Quacks! A man goes to 'em to git better, and 'e ends up with more than he went. They'll never git no chance to jab me in the sweet-breads or stick needles into me be'ind from now on, I can tell you. I've 'ad 'em, bloomin' well 'AD 'em, the 'ole bang box and dice of 'em."

VALERIE CHICK.

Out of the Past.

In this column will be published from time to time extracts, taken from medical journals, newspapers, official and historical records, diaries and so on, dealing with events connected with the early medical history of Australia.

THE NEW SOUTH WALES BRANCH OF THE BRITISH MEDICAL ASSOCIATION.¹

[From the *Australasian Medical Gazette*, December, 1882.]

THE branch of the "British Medical" enjoying a wider field of labour, embracing ethical, medico-social, and political subjects has had a more active and useful career during the past winter. The scientific papers, however, have not been so numerous as is desirable, though some have possessed great merit. The last on "Pernicious Anæmia" by Dr. Chisholm was characterized by originality and thoughtfulness and elicited a vigorous and improving discussion. The branch can boast of three triumphs during the winter: the elaboration of an excellent basis of the quarantine system, the adoption of measures for testing the colour vision of railway employees and look-out men on board ships, and an exposé of friendly societies' frauds. The report in connection with the latter has not yet appeared, but when it does, I am informed it will reveal a most serious condition of things.

Correspondence.

THE TREATMENT OF DISEASE OF THE THYROID BY IRRADIATION.

SIR: Through circumstances outside my control, the proofs of my paper on "The Treatment of Diseases of the Thyroid by Irradiation", printed in your last issue, did not reach me in time for correction.²

The corrections would have included two which I consider are vitally important, requiring more emphasis than that provided by the standard "Corrigenda".

Firstly, the maintenance dosage of thyroid extract in hormone-dependent well-differentiated carcinomas is three (3) to four (4) grains daily—not three-quarters of a grain.

Secondly, in the last paragraph of the paper where the dangers to the staff who administer ²¹⁴I or nurse the patients who receive it was mentioned, Table VI illustrating the dosage of gamma radiation from the isotope should have been referred to, rather than in an irrelevant context several paragraphs earlier.

Yours, etc.,

Cancer Institute Board,
Melbourne,
Undated.

W. P. HOLMAN.

AUSTRALIAN RHEUMATISM ASSOCIATION (VICTORIAN BRANCH).

SIR: In June, 1956, a Victorian Branch of the Australian Rheumatism Association was formed with 26 members.

Rule 15 of the branch says that a scientific meeting shall be held at least twice a year. In 30 months only one meeting has been held—in December, 1957.

¹ From the original in the Mitchell Library, Sydney.

² The fault for Dr. Holman's not receiving his proof in time was ours. We regret this.—EDITOR.

Rule 10 says that the Council shall meet, presumably, more often than twice a year. Since August, 1956, only one meeting of the Council has been held—in September, 1957.

Is the Victorian Branch of the Australian Rheumatism Association going to follow in the footsteps of the Australian Rheumatism Council? No, not "footsteps". A child which has died at birth does not progress on its feet.

Yours, etc.,

M. KELLY.

410 Albert Street,
East Melbourne, C.2,
December 12, 1958.

Notes and News.

Family Doctor.

Family Doctor continues to provide a menu varied enough to interest all its readers. In the November issue, the first two articles discuss sleep, with illustrations calculated to induce a feeling of utter relaxation in anyone. There is an interesting discussion of clothes in winter, with some sound advice, and this is followed by a useful account of "Your Amazing Glands". "Cold Comfort" provides some thoughts on how to be kind to oneself (and, incidentally, one's family) during the course of a cold in the head. The excellent results that can be achieved by speech training of deaf children are described shortly, in a few words and three pictures; these show a Lebanese child, Maha, seven years old, one of the 20 handicapped and orphaned children of Palestine Arab refugees helped by money collected by the United Nations Association of Great Britain. Maha's eager concentration is very appealing.

The December issue, as would be expected, has some of its accent on Christmas. The editor in his letter, entitled "Make a Wish", applauds the magic of Christmas, and gives some good advice on how not to spoil it by putting easily swallowed charms and coins in the pudding. An interesting series of articles on children and television could be read profitably by everyone faced with an association of the two.

An article on "Keeping the Old Folks at Home" gives some practical hints on what must surely be one of the most pressing problems of the present age. "Playing with Danger" discusses the difficulties relating to the determined toddler and the fascinating box of matches. Two pages of unusual recipes for Christmas food are presented under the title "Christmas Round the World"; one recipe is for "Australian Fruit Salad".

Both issues of *Family Doctor* contain, in addition to what has been mentioned, many shorter articles, whimsical or serious, and the usual regular features. The production is as good as ever, and either issue (or both) would make excellent reading for all the family over the holiday season.

Flameproof Enclosure of Electrical Equipment.

The Standards Association of Australia announces the issue for public critical review and comment of a draft standard specification for the flameproof enclosure of electrical equipment (Document 402).

The purpose of this specification is to establish requirements for a form of enclosure for electrical equipment which will permit its use in inflammable or explosive atmospheres without risk of fire or explosion; that is, for flameproof enclosure of electrical equipment as required by mining regulations or by the SAA Wiring Rules for certain hazardous locations.

The preparation of an Australian standard for flameproof enclosures has been under consideration for many years, but action was deferred pending a revision of B.S.229 and completion of the IEC specification. This draft takes those specifications into account, being based particularly on B.S.229 and on experience gained locally in examination and testing of flameproof equipment.

Comment on Document 402 will be welcomed, particularly from persons and organizations with experience in the supply and use of flameproof equipment. Copies of Document 402 can be obtained from the headquarters of the Association, 157 Gloucester Street, Sydney, and from branch offices in capital cities and at Newcastle. Comment on the draft should be sent to the Association not later than February 28, 1959.

DISEASES NOTIFIED IN EACH STATE AND TERRITORY OF AUSTRALIA FOR THE WEEK ENDED DECEMBER 6, 1958¹

Disease.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Northern Territory.	Australian Capital Territory.	Australia. ²
Acute Rheumatism	3(1)	..	7(4)	..	2	..	..	..	12
Amebiasis .. ..	..	..	..	..	..	..	..	..	..
Ancylostomiasis .. ..	..	..	..	..	..	..	4	..	4
Anthrax .. ..	..	..	..	..	..	..	..	..	..
Bilharziasis .. ..	..	..	..	..	..	..	..	..	..
Brucellosis	1	..	..	..	..	..	..	..	1
Cholera .. ..	..	..	..	..	..	..	..	..	..
Chorea (St. Vitus) .. ..	..	..	..	..	..	..	..	..	..
Dengue .. ..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	7(6)	..	4(4)	..	..	..	..	..	11
Diphtheria	1	..	..	..	..	..	..	..	1
Dysentery (Bacillary) .. ..	..	..	1(1)	..	3(2)	..	..	..	4
Encephalitis .. ..	..	..	..	..	..	..	..	..	..
Filariasis .. ..	..	..	..	..	..	..	..	..	..
Homologous Serum Jaundice .. ..	..	..	..	..	..	..	..	..	..
Hydatid .. ..	..	..	..	..	..	..	..	..	..
Infective Hepatitis	100(25)	..	4(1)	10(2)	1(1)	..	..	..	121
Lead Poisoning .. ..	..	..	..	..	1(1)	..	..	..	1
Leprosy .. ..	..	..	..	..	..	..	2	..	2
Leptospirosis .. ..	..	..	1	..	..	..	..	..	1
Malaria .. ..	..	..	1(1)	..	..	..	..	..	1
Meningococcal Infection	3(2)	..	..	..	..	..	..	..	3
Ophthalmia .. ..	..	..	..	..	1	..	..	..	1
Ornithosis .. ..	..	..	..	2	..	..	..	..	2
Paratyphoid	1(1)	..	..	..	..	..	..	..	1
Plague .. ..	..	..	..	..	..	..	..	..	..
Polio-myelitis .. ..	..	..	..	..	..	..	..	..	..
Puerperal Fever	1	..	..	..	..	..	..	..	1
Rubella .. ..	..	..	..	7(6)	92(77)	..	..	3	102
Salmonella Infection .. ..	..	..	..	..	1(1)	..	..	..	1
Scarlet Fever	13(6)	..	6(2)	1	2(2)	..	..	..	22
Smallpox .. ..	..	..	2(1)	..	..	..	..	..	..
Tetanus .. ..	..	..	..	..	..	..	12	..	2
Trachoma .. ..	..	..	..	..	1	..	..	..	13
Trichinosis .. ..	..	..	..	..	..	..	..	..	..
Tuberculosis	22(13)	..	12(5)	..	2	4(2)	..	..	40
Typhoid Fever .. ..	..	..	..	..	..	..	..	..	..
Typhus (Flav., Mite- and Tick-borne) .. ..	..	..	1	..	..	..	..	..	1
Typhus (Louse-borne) .. ..	..	..	..	..	..	..	..	..	..
Yellow Fever .. ..	..	..	..	..	..	..	..	..	..

¹ Figures in parentheses are those for the metropolitan area.

² Figures incomplete owing to absence of returns from Victoria.

Royal Australasian College of Surgeons.

GRANTS-IN-AID FOR POST-GRADUATE SURGICAL EDUCATION.

THE Council of the Royal Australasian College of Surgeons has decided to allocate a part of the income from the Development Fund for the purpose of making a limited number of grants-in-aid to candidates preparing for the final fellowship examinations in May and October, 1959. The object is to render financial assistance which may be necessary to enable candidates to attend the authorized courses in Melbourne and Sydney. These grants should be regarded as long-term, interest-free loans.

Further particulars are obtainable from the Secretary of the College, Spring Street, Melbourne, C.I, Victoria.

Notice.

THE CHILDREN'S MEDICAL RESEARCH FOUNDATION OF N.S.W.

THE following is a list of donations to the Children's Medical Research Foundation of N.S.W. received from members of the medical profession in the period December 4 to 10, 1958:

Dr. and Mrs. A. B. Cuthbert: £10 10s. 6d.
Dr. and Mrs. K. S. Jones, Dr. W. D. Cunningham: £10 10s.
Dr. and Mrs. Neville Percy, Dr. M. J. Pinner, Dr. D. S. Stuckey: £10.
Dr. McKinnon: £7 10s.
Dr. Busby: £7 7s.
Dr. and Mrs. Klineberg, Dr. Richard Oliver: £5 5s. 6d.
Dr. S. Gosby, Dr. and Mrs. Laurence Hughes: £5 5s.
Dr. T. Barry: £3 3s.
Previously acknowledged: £7668 15s. 3d. Total received to date: £7769 6s. 9d.

Medical Appointments.

Dr. J. B. Hill, Dr. J. M. O'Neill and Dr. R. A. Packer have been issued with licences in Queensland authorizing them to sign permissions and certificates for cremation, and to grant permission to cremate any human body after death.

Nominations and Elections.

The undermentioned has applied for election as a member of the New South Wales Branch of the British Medical Association:

Cronin, Anthony Earl, M.B., B.S., 1956 (Univ. Sydney), c.o. Dr. Lyle Brown, Norton Street, Leichhardt.

The undermentioned have been elected as members of the New South Wales Branch of the British Medical Association: Lucas, Garry Roland, M.B., B.S., 1958 (Univ. Sydney); Koller, Karl Max, M.B., B.S., 1957 (Univ. Sydney); Lambert, Godfrey Meyer, M.B., B.S., 1957 (Univ. Sydney); Reading, Anthony, John, M.B., B.S., 1957 (Univ. Sydney); Walker, Geoffrey Shepherd, M.B., B.S., 1955 (Univ. Sydney); James, Alexander, M.D., 1910 (Univ. Moscow) (registered in accordance with the provisions of Section 17 (2A) of the Medical Practitioners Act, 1938-1958).

The undermentioned has applied for election as a member of the Victorian Branch of the British Medical Association:

Knight, Edwin Walter, M.B., B.S., 1957 (Univ. Adelaide), 1447 Burke Road, East Kew.

THE undermentioned have applied for election as members of the South Australian Branch of the British Medical Association:

Moten, Kathleen Margaret, M.B., B.S., 1957 (Univ. Adelaide), 23 High Street, Unley Park, South Australia.

Litt, John Derek, M.B., Ch.B., 1949 (Univ. Edinburgh), 10 Cambridge Terrace, Kingswood, South Australia.

The undermentioned have been elected as members of the South Australian Branch of the British Medical Association: Hetzel, Peter Stuart, M.B., B.S., 1948 (Univ. Adelaide), M.D., M.Sc. (Minnesota), M.R.C.P.; Mitchell, Noel John, M.B., B.S., 1956 (Univ. Adelaide).

Deaths.

THE following death has been announced:

SMITH.—Leslie Smith, on December 10, 1958, at Melbourne.

Diary for the Month.

JAN. 9.—Queensland Branch, B.M.A.: Council Meeting.
JAN. 19.—Victorian Branch, B.M.A.: Finance, House and Library Subcommittee.
JAN. 22.—Victorian Branch, B.M.A.: Executive of the Branch Council.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Medical Secretary, 135 Macquarie Street, Sydney): All contract practice appointments in New South Wales. Anti-Tuberculous Association of New South Wales. The Maitland Hospital.

South Australian Branch (Honorary Secretary, 80 Brougham Place, North Adelaide): All contract practice appointments in South Australia.

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ALL articles submitted for publication in this Journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given: surname of author, initials of author, year, full title of article, name of journal, volume, number of first page of the article. The abbreviations used for the titles of journals are those adopted by the Quarterly Cumulative Index Medicus. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors submitting illustrations are asked, if possible, to provide the originals (not photographic copies) of line drawings, graphs and diagrams, and prints from the original negatives of photomicrographs. Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

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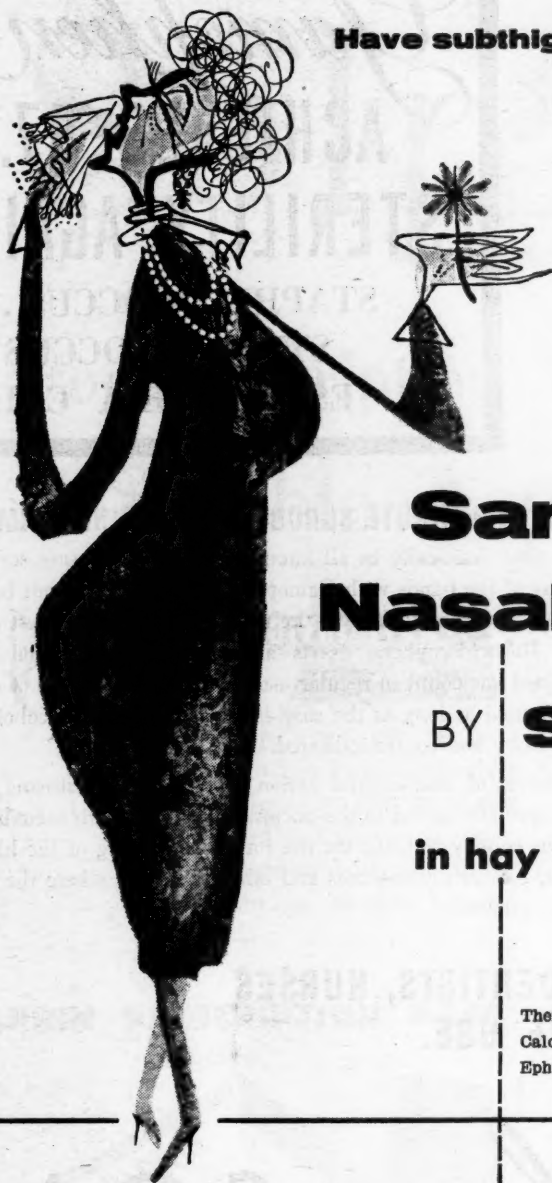
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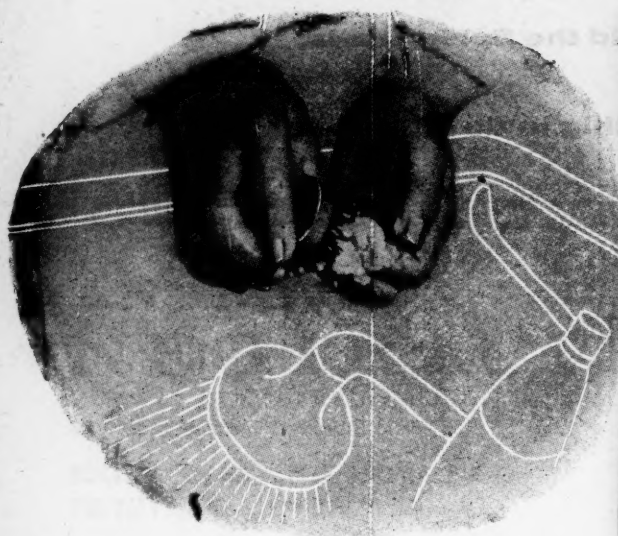
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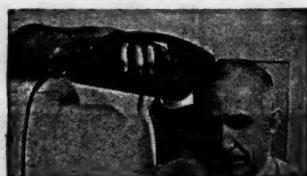
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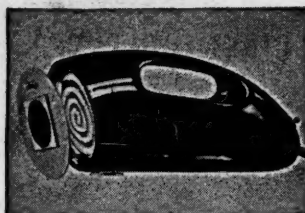


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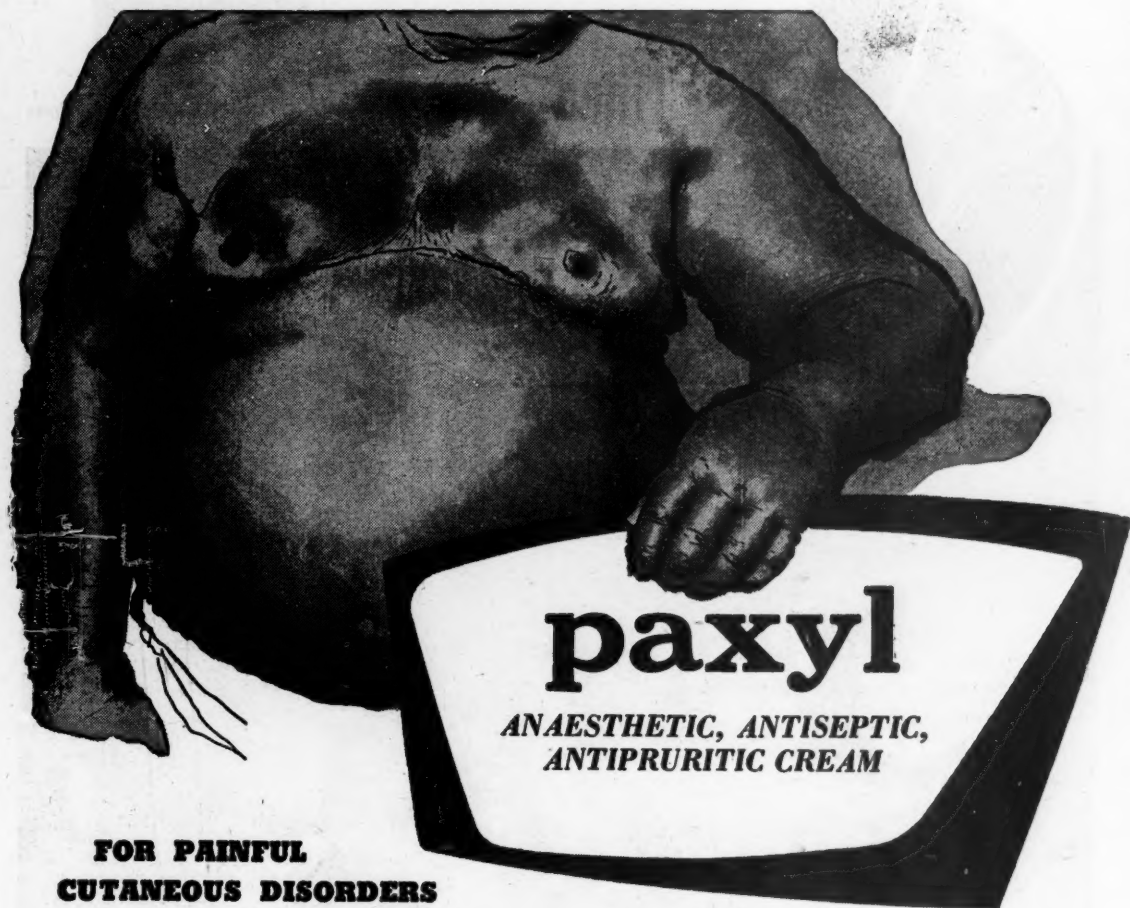
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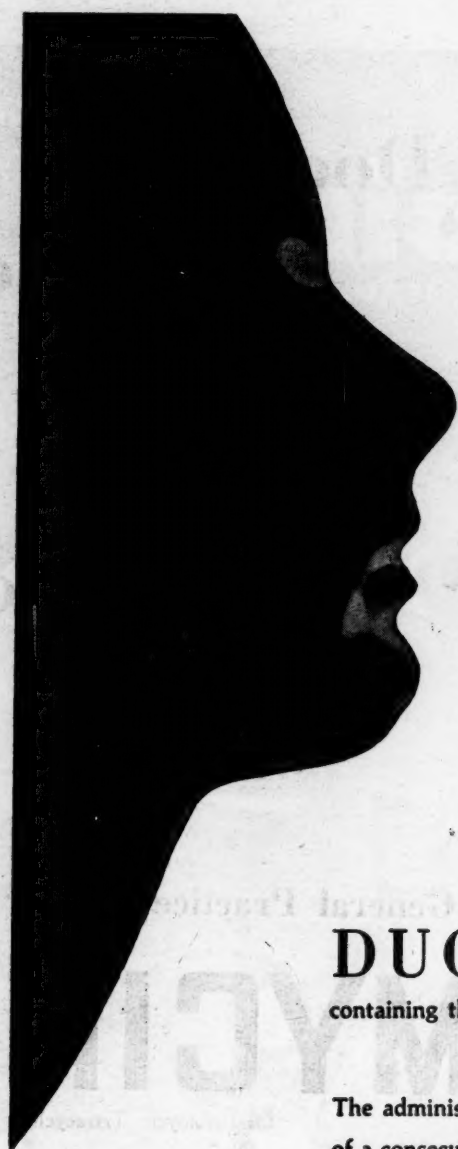
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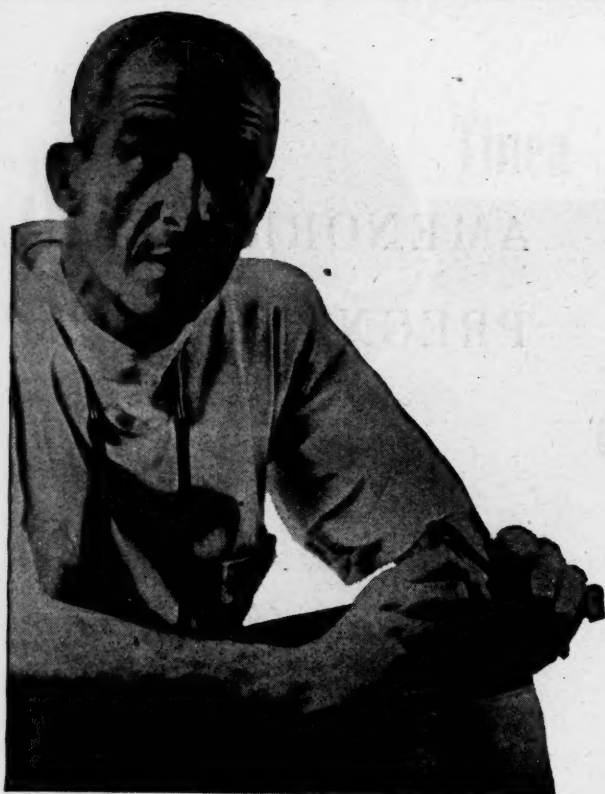
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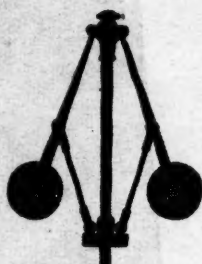
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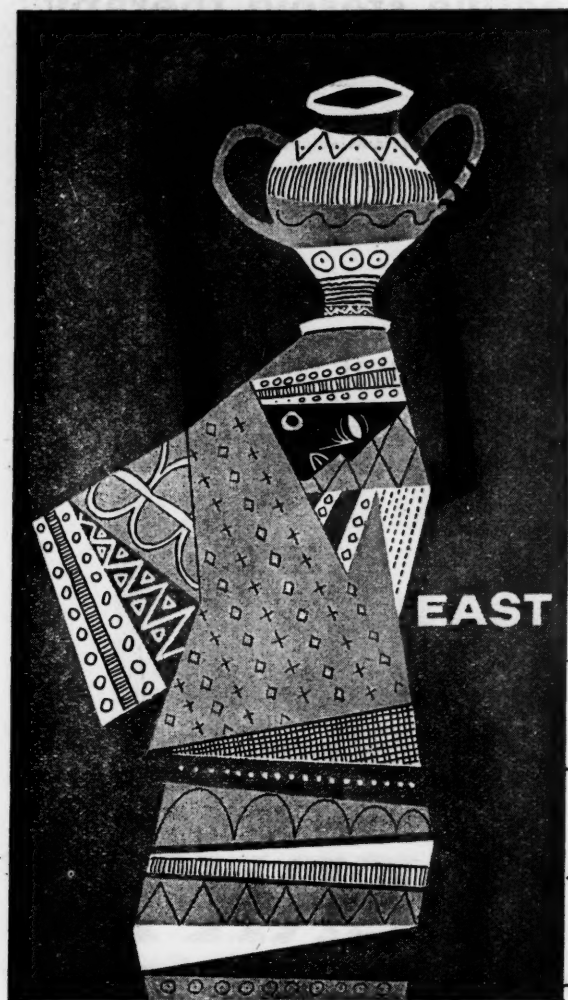
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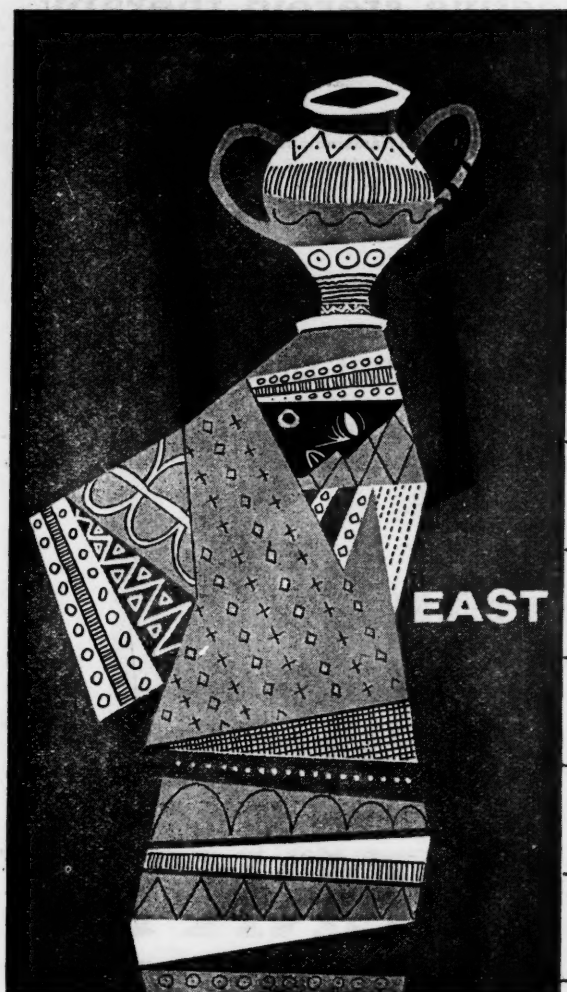
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1 tablet 2 or 3
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SUPPLIED:
Scored tablets
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(Triamcinolone, Lederle)
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A new **high** in anti-inflammatory effects
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BOTTLES OF 10, 30 AND 100 SCORED TABLETS

Doctors prescribe
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*Lederkyn provides a margin of safety
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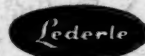
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Approximately: 28 times more potent than hydrocortisone... 7 times more potent than prednisolone... 5 times more potent than triamcinolone or methylprednisolone...



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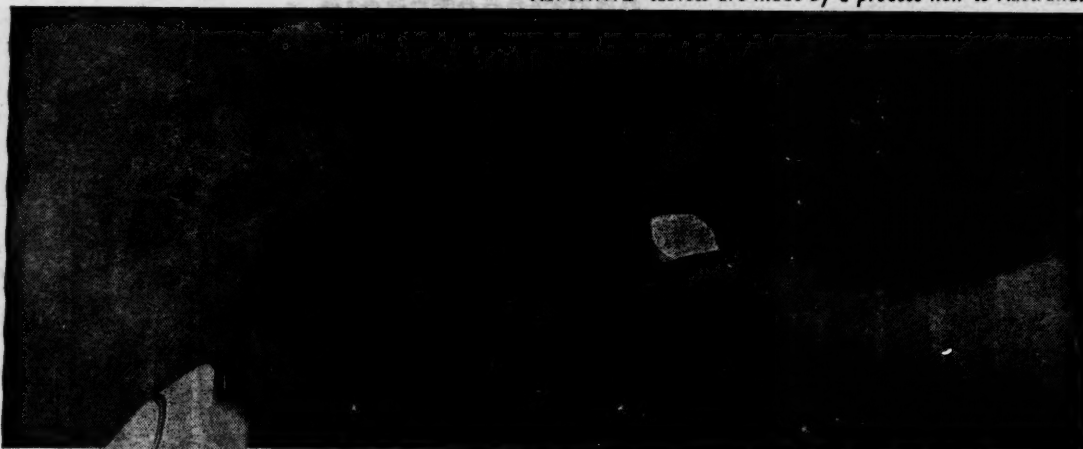


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Each tablet contains :

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Calc. Pantothenate	1.0 mg.
Pyridoxine	0.5 mg.

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Application of this new process to B Group presents in 'ALTORVITE':—

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'ALTORVITE' provides high potency dosage of the B Group vitamins, plus ascorbic acid.

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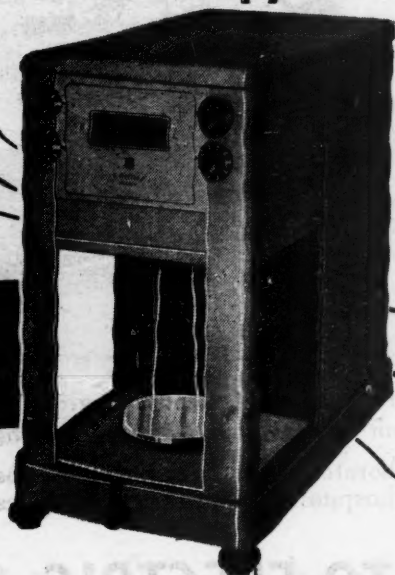


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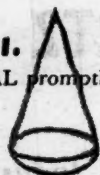
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weigh the
advantages of ...



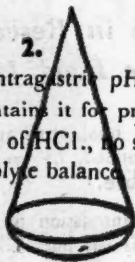
1.

GLYSINAL promptly relieves the pain of peptic ulcer.



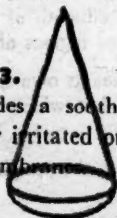
2.

GLYSINAL rapidly raises the intragastric pH to the optimal level of 3.5-4.5 and maintains it for prolonged periods with no rebound secretion of HCl., no systemic alkalosis, no disturbance in electrolyte balance, no toxic reactions.



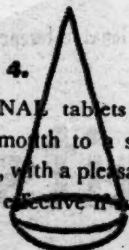
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GLYSINAL provides a soothing, protective mucilaginous coating over irritated or ulcerated areas of the gastro-duodenal membrane.



4.

GLYSINAL tablets disintegrate quickly in the mouth to a smooth, creamy consistency, with a pleasant flavour. They are equally effective if swallowed whole.



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Regd.

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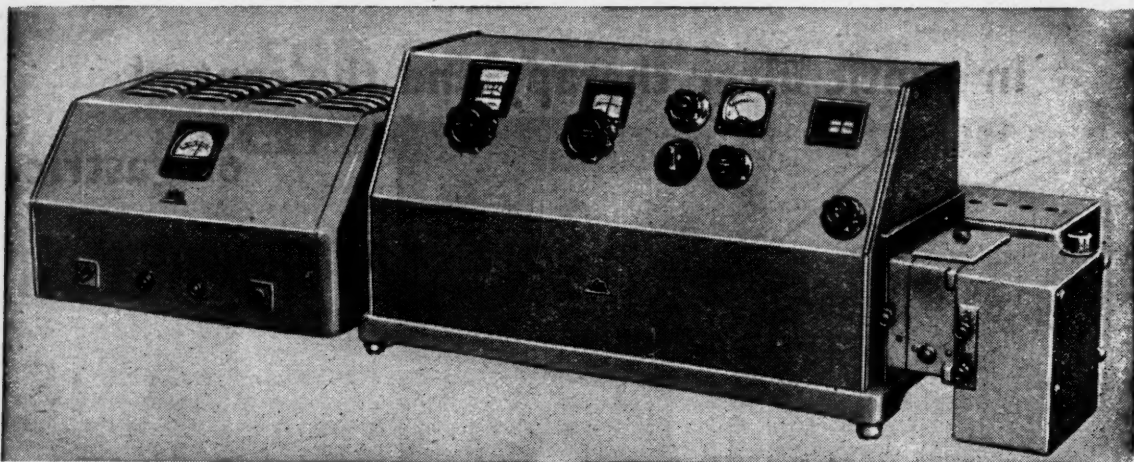
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The spectrophotometer is designed for the rapid identification, qualitative and quantitative determinations of substances, quite often not capable of otherwise being identified, by reason of similarity of chemical behaviour, or because of the minute amounts available.

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This instrument is used particularly in Arnott's Food Laboratory for checking the quality of essences and other ingredients against any minute adulterations.

This instrument is now the basis of many official standard methods of analysis which are legal reference standards.

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There is no Substitute for Quality.

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Sigma Company is equally confident in claiming the following advantages for **CILICAINE SUSPENSION**:

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(2) Gillbespy R.C., 1957, in a private communication reported . . . "occasional patients showed a rise in haemoglobin of more than 2% per day."

(1) Franklin M. et al. J.A.M. A 166 1685 April, 5th, 1958.

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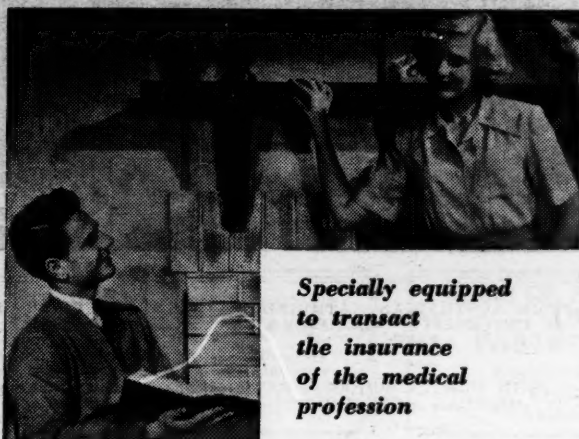
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MEDICAL OFFICER (GOVERNMENT INSURANCE OFFICE N.S.W.), DEPARTMENT OF PUBLIC HEALTH.

Salary £1868, range £2338. Commencing rate according to qualifications and experience. Applicants should have had at least two years' experience since graduation. Duties consist of the medical examination and report of injured workers under the Workers Compensation Act. Apply PUBLIC SERVICE BOARD, O'Connell Street, Sydney, by 9th January, 1959.

OCUM WANTED FOR PARTNERSHIP PRACTICE, Western suburbs, Sydney, from 2nd 28th February, 1959. Married. Live in. Own car. Salary 45 weeks plus allowance. Phone X3577.

EXPERIENCED DERMATOLOGIST with higher degrees (Europe) seeks assistantship or partnership in established dermatological practice in Sydney. Reply to 990, c.o. this office.

MARRIED LOCUM REQUIRED FOR THREE WEEKS from January 12, 1959, for solo practice in choice Sydney seaside suburb. Stable man with some anaesthetic and surgical experience would be considered for subsequent assistantship with view. Reply with curriculum. £50 p.w. Reply to 992, c.o. this office.

ALFRED HOSPITAL, COMMERCIAL RD., PRAHRAN, VICTORIA.

The Board of Management invites applications from duly qualified medical practitioners for the appointment of Acting Honorary Physician to Out-Patients for a period of six months, commencing 1st February, 1959.

Applications must be submitted on the prescribed form obtainable at the hospital, and will be received by the undersigned until 7th January, 1959.

Personal canvass will disqualify. —C. G. RANKIN, Manager.

TASMANIA

Practice for sale in growing north coast town with C.T. over £8000 p.a. Excellent hospital facilities. Attractive home with three bedrooms, modern kitchen, bathroom, etc., and three-room surgery suite. Price of practice and property £5600. Terms; £1500 deposit.

NIAL & COGHAN PTY. LTD., 127 Collins Street, Melbourne. MF 1983.

ASSISTANT, VIEW PARTNERSHIP, required by two-man Sydney suburban practice with outstandingly rapid growth. Surgical ability preferred. Salary £50 p.w. plus car expenses. House available. Reply No. 991, c.o. this office.

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Experienced woman doctor offers to relief/assist 2-3 weeks in coastal/mountain/farming area within 300 miles of Brisbane when accommodation available for husband and school-age daughters. Phone Brisbane 60 1574.

EXPERIENCED senior secretary-receptionist-typist, telephonist, etc., now available. Please ring XU 5228 (Sydney) after 6 p.m.

FOR SALE: Office desk, gynaecological examination couch, and eight chairs in "Vynex" upholstery. All made to order. Virtually unused. £120. FF 2178 (Sydney).

FOR SALE: Attractive brick home, main road, Sydney suburb. Excellent position for doctor. Fully developed area. Shops handy. LU 5130.

PROFESSIONAL OFFICES FOR LET in the largest and most modern business block on the Gold Coast—Shepherd House, just completed and centrally situated at 97 Scarborough St., Southport. Write to Box 49, P.O., Southport, Queensland, or phone B 3266.

QUEENSLAND RADIUM INSTITUTE.

A vacancy exists for the position of Resident Medical Officer within the Queensland Radium Institute. Applicants should have completed one or two years of post-graduate experience when duties begin. Commencing salary for appointee with one year's experience £1411 p.a., two years' experience £1971 p.a., subject to future basic wage adjustment.

Appointee will have opportunity for specialist training in radiotherapy in a progressive centre equipped with therapeutic apparatus ranging up to super-voltage unit.

Applications, enclosing testimonials, to be forwarded by 10th January, 1959, to the Manager, Brisbane and South Coast Hospitals Board, Herston Road, Brisbane.

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Self-contained surgery and waiting room in main road of Hobart (Tasmania) suburb. Reply No. 997, c.o. this office.

SHARE IN PARTNERSHIP IN N.S.W. required by experienced G.P. (1940 graduate) with recent overseas post-graduate experience in surgery, orthopaedics and paediatrics. Reply No. 971, c.o. this office.

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MAREEBA HOSPITALS BOARD, QUEENSLAND.

APPLICATIONS are invited for the position of Resident Medical Officer with one year's hospital experience. Duties include visiting small auxiliary hospitals and out-patients' clinics, in addition to general duties at Mareeba Hospital. Salary £1385 per annum plus basic wage adjustment (at present £81 p.a.) and northern allowance, £48 per annum, with free board, lodging and laundry if single, or free furnished house for married applicant. Four weeks' paid annual leave. State age, marital status, qualifications, experience, and earliest date available. Applications, with copies of references, to the Secretary, P.O. Box 145, Mareeba, North Queensland.

DOCTOR WANTED to take over practice for 9-12 months in large North Queensland coastal city (population approximately 25,000). Doctor to take half of net profit. Gross income last 12 months over £15,000. Good public and private hospitals, modern surgery. New furnished flat can be rented if desired. To start approximately February or March, 1959. Higher degree preferred, but not essential. Reply No. 921, c.o. this office.

FOR SALE, half-share of solo practice, St. George district, Sydney. Gross takings last twelve months over \$9000; will expand. Price £2000. Reply No. 886, c.o. this office.

ASSISTANT WANTED, eastern suburbs, Sydney. Car essential. Unfurnished flat available. £2250 plus £250 car expenses per year. Reply No. 923, c.o. this office.

ENERGETIC ASSISTANT WANTED, group practice, city (Sydney) area, view partnership. Good working conditions. Liberal bonus. £45 p.w. plus £5 car allowance. Petrol and oil provided. Reply No. 911, c.o. this office.

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TULLY HOSPITAL, QUEENSLAND.**MEDICAL SUPERINTENDENT.**

APPLICATIONS are invited for the position of Medical Superintendent at the Tully Hospital. No right of private practice. Salary: minimum £2325, maximum £2575. Partly furnished modern residence with fuel, light and power provided without charge. Hospital daily average: in-patients 30, out-patients 22. General training school for nurses. Two private practitioners in town. Detailed applications should be forwarded to the Secretary, Tully Hospitals Board, Tully, Queensland. Position available from 1.12.58.

BALMAIN AND DISTRICT HOSPITAL, N.S.W.

APPLICATIONS are invited for one vacant position as Honorary Physician. Apply, stating age, experience, qualifications, and enclosing copies of references, to H. W. SIMPSON, Chief Executive Officer and Secretary, Booth St., Balmain, Sydney. Telephone: WB 2013.

BUNDABERG HOSPITALS BOARD, QUEENSLAND.**SENIOR RESIDENT MEDICAL OFFICER.**

APPLICATIONS are invited for the position of Senior Resident Medical Officer at Bundaberg Hospital, Queensland. Classification £1775 minimum, £1855 maximum, plus basic wage adjustment £81 p.a. To qualify for minimum salary appointee must have served at least two years as a Junior Resident. Free board and lodging provided for single appointee or unfurnished residence available for married appointee with free fuel, light and power. Applicants to state qualifications, experience, age, marital status and particulars of war service, if any. Apply to Secretary, Hospitals Board, Bundaberg, Queensland, not later than 15th January, 1959.

RENWICK HOSPITAL FOR INFANTS, SUMMER HILL, N.S.W.

APPLICATIONS on prescribed form are invited for the position of Resident Medical Officer from January, 1959. Salary range of £1234 to £1677 p.a., less £3 13s. 11d. p.w. B. and R., subject to basic wage variation. Particulars from Medical Superintendent. Canvassing of directors is prohibited.—W. B. ROND, Secretary, Benevolent Society of N.S.W., Thomas Street, Sydney.

THE AUSTRALIAN NATIONAL UNIVERSITY, CANBERRA, A.C.T.**JOHN CURTIN SCHOOL OF MEDICAL RESEARCH.**

APPLICATIONS are invited for eight appointments:

A Research Fellowship and two Senior Research Fellowships in the Department of Experimental Pathology; two Research Fellowships in the Department of Medical Chemistry; and a Fellowship, Research Fellowship and Senior Research Fellowship in the Department of Physiology.

Applicants should have appropriate research experience and an interest in the work of one of the departments.

In the Department of Experimental Pathology work is in progress on lipid transport and metabolism in relation to atherogenesis, the functional significance of the lymphatic system in health and disease, and upon cellular mechanisms of defence against infectious disease.

Those appointed to the Department of Medical Chemistry will work on hydropyrimidines or pteridines, and applicants should have experience in pyrimidine or heterocyclic chemistry.

The Department of Physiology is carrying out experimental work on the peripheral and central nervous systems, both in the electrical and pharmacological aspects. Work in neurochemistry is also being done, and facilities for physiological investigations on climatology will shortly be available.

The salary ranges for Senior Research Fellows and Research Fellows are £A2233-£A2713 and £A1398-£A2113, respectively, and appointment is made for three years, with possible extension to the maximum of five years.

The salary and range of a Fellow are determined within the limits £A1793-£A2563, and appointment is made for an initial period of five years; thereafter it may be made permanent. A Fellow is entitled to one year's study leave on full pay, plus a contribution towards travel and other expenses, in every seven years.

Superannuation is on the F.S.S.U. pattern. Reasonable travel expenses are paid and assistance with housing is provided.

Further particulars should be obtained from the undersigned, to whom applications should be sent by 6th February, 1959. Applications sent after that date may, however, be considered.

R. A. HOHNEN,
Registrar.

Box 4, G.P.O.,
Canberra, A.C.T.,
1st December, 1958.

GYMPIE HOSPITALS BOARD, QUEENSLAND.

APPLICATIONS are invited to the position of Senior Resident Medical Officer at the Gympie Hospital. Salary classification: First year £1775, second year £1885, plus basic wage adjustments, at present £80. Flat for single man or married couple available. Applications with full personal details and earliest starting date available for duty (vacancy occurs 1st January 1959), together with copies of references, should be addressed to the Secretary, Gympie Hospitals Board, Gympie. — L. JACKSON, Secretary.

ROYAL PERTH HOSPITAL, WESTERN AUSTRALIA.**REGISTRAR TO THE DEPARTMENT OF NEUROLOGY AND NEUROSURGERY.**

APPLICATIONS are invited from medical graduates of at least two years for the above post, to commence duty early in 1959, the appointment for one year in the first instance.

Salary: £1498-£2143 p.a., depending on qualifications and experience. Of this £171 p.a. will be deducted for a person living in.

In addition to all relevant personal details, applications must include particulars of qualifications, experience, a recent photograph, and the names of two referees, these to be forwarded to the Medical Superintendent, JOSEPH GRIFFITH, Administrator.

ASSISTANT WANTED IN GENERAL PRACTICE Salary £45 p.w. plus £5 car allowance. Flat available at low rent. Alternate nights and week-ends. Reply P.O. Box No. 18, Parramatta. Telephone YY 500 (Sydney).

LOCUM WANTED in three-month practice, St. George area, from 12th January for five weeks. Salary £50 per week. LW 1834 (Sydney)

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THE COLLEGE OF PATHOLOGISTS OF AUSTRALIA: EX- AMINATION FOR MEMBERSHIP.

The College of Pathologists of Australia will hold examinations for membership of the College in 1959. Written examinations will be held in June in the candidates' own homes and viva voce examinations in Sydney in August.

Full details and application forms are available from the Honorary Secretary of the College, 5 Macquarie Street, Sydney. The closing date for acceptance applications is February 28, 1959.

ASSISTANT, view partnership, to start January 1959, required pleasant coastal, three-man practice within 80 miles of Sydney, general time off. Salary £45 per week plus car allowance and rent house. Reply with particulars No. 938, c.o. this office.

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Write personally to

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CHARLEVILLE HOSPITALS BOARD, QUEENSLAND.

APPLICATIONS are invited from registered medical practitioners for the position of Full-Time Medical Superintendent of the Charleville Base Hospital. Daily average 54; out-patients 14. Classification £2220-£2470, plus cost-of-living adjustments (£81 per annum at present).

Visiting specialist surgeon appointed by Board to attend patients' sessions and for surgery as required.

Week-end leave available by arrangement.

New brick residence provided; no rental charge. Residence is unfurnished, but contains new linos, inner venetians, hot-water system, electric stove, built-in cupboards in kitchen and electric copper.

Fuel, light and power are provided free of charge.

Applicants to state age, marital state, war service (if any), experience and qualifications.

Applications close with the Secretary, Charleville Hospitals Board, Box 8, P.O., Charleville, at 5 p.m. on 10th January, 1959.—J. A. GLYNN, Secretary, Charleville Hospitals Board.

EXPERIENCED AND RELIABLE G.P. AVAILABLE (morning surgeries). Parramatta or Epping-Hornsby area preferred. Phone WL 2168 (Sydney).

NAMBOUR HOSPITAL, QUEENSLAND.

APPLICATIONS are invited for two Resident Medical Officers for the above hospital. Daily average in-patients approximately 80, out-patients approximately 50. Salary range: 1st year £1230, 2nd year £1385, 3rd year £1550, plus basic wage adjustment, at present £81 per annum.

Cottage available in grounds and single officers' quarters available at hospital.

Nambour is centre of thriving farming area, situated 70 miles north of Brisbane and eight miles from the coast. Excellent climate. Wide general experience available to Resident Medical Officers.

Applications, accompanied by copies of references, and including full particulars of age, experience and marital status, to be addressed to the Secretary, Maroochy Hospitals Board, Nambour, Queensland.

BALMAIN AND DISTRICT HOSPITAL, N.S.W.

APPLICATIONS are invited for two vacant positions as Honorary Surgeon. Apply, stating age, experience, qualifications, and enclosing copies of references, to H. W. SIMPSON, Chief Executive Officer and Secretary, Booth St., Balmain. Telephone: WB 2013 (Sydney).

THE RACHEL FORSTER HOS- PITAL, REDFERN, N.S.W.

APPLICATIONS are invited for the following:

Honorary Anaesthetist.

Honorary Assistant Anaesthetist.

Applications (three copies to be submitted) on the prescribed form, together with copies of testimonials, close January 14, 1959.—MARY C. PUCKEY, General Superintendent.

ASSISTANT WANTED, view early partnership. Existing two-man partnership (N.S.W.) requires third partner. Excellent hospital facilities. Salary £50 per week plus car allowance and house rent free. Reply No. 972, c.o. this office.

ASSISTANT WANTED for Illawarra suburb. To have at least two years' hospital experience and proficiency in obstetrics. £2400 p.a. House available. Reply No. 935, c.o. this office.

ASSISTANT WANTED, view partnership, in four-man practice, Illawarra district (Sydney). Excellent opportunities for person primarily in general practice who may like to develop his own special interests. Salary £45 per week plus expenses. For full details apply No. 910, c.o. this office.

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ROYAL HOSPITAL FOR WOMEN, PADDINGTON, N.S.W.

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The appointment is for the period ending August, 1960, and may then be renewed for periods of three years.

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Applications close on January 15, 1959, and should be addressed to the Secretary, Rockhampton Hospitals Board, Rockhampton, Qld.

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